AMERICAN Railroad Journal.

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Steam Navigation, Commerce, Finance, Machinery, Mining, Manufactures, New Inventions, Street Railroads.

SECOND QUARTO SERIES.—VOL. XXXIX., No. 4.] NEW YORK, JANUARY 27, 1883. [WHOLE No. 2,439.—VOL. LVI.

THE editor of the RAILROAD JOURNAL is pleased to receive information of railroad enterprises already entered upon or projected, items regarding the business done on the roads, such as relate to persons employed in the railroad and kindred interests; in short, about all matter which the readers of such a paper as this are gratified to find within its columns.

INCORPORATION.

THE Yellowstone National Park Improvement Company has been organized under the laws of New Jersey, with a capital of $2,000,000. Its incorporators include Rufus Hatch, Roscoe Conkling, General James A. Williamson, of Boston; Richard T. Merrick, of Washington; Frederic E. Church, the artist; J. B. Houston, president of the Pacific Mail Steamship Company; Aaron J. Vanderpoel, Judge John R. Brady; Samuel W. Allerton, of Chicago; C. M. Loring, of Minneapolis, and other well known men in various parts of the country. The officers are: Rufus Hatch president, C. T. Hobart and F. E. Church vice-presidents, C. E. Quincey treasurer. The Farmers' Loan and Trust Company of New York are the financial agents of the company.

ARTICLES of incorporation have been filed in the Recorder's office at Springfield, Ill., by the Illinois Northern Railroad Company, which is to be built from Peoria northward to Milwaukee, Wis., via Sterling. The capital stock is fixed at $10,000,000.

AT a meeting of the directors of the Springfield and St. Louis Railroad Co., held in Litchfield, Ill., articles of incorporation were adopted changing the name from the Springfield and St. Louis to that of the Chicago, Springfield and St. Louis.

CONSTRUCTION.

THE Oregon Short Line Railroad will be completed to Wood River Junction by February 1.

A PARTY of surveyors are going over the proposed route of the Meridian, Gainesville and Warrior Coal Fields Railroad.

A SURVEY of the Reading, Marietta and Hanover Railroad has been ordered from Chickies, Lancaster county, across the Susquehanna river to York.

THE Fort Scott and Wichita Railroad is now built and running for 130 miles—from Fort Scott to El Dorado, Kansas. But thirty miles more are to be built to complete it.

ONLY about 30 miles of the Georgia Pacific Railroad remain to be completed—between Birmingham and Anniston. It is expected to have the road completed to Birmingham within the year.

THE Bridgton and Saco (Me.) Narrow-Gauge Railroad was completed and formally opened on the 20th inst. The road is thoroughly built and finely equipped, and will be opened for business on the 29th inst.

TUNNEL No. 2, on the Oregon and California extension, was finished on the 9th inst. The track is now laid to the fifty-second mile, and will be opened for traffic to the sixty-seventh mile, near the stage road, about the 10th of March.

RICARDO OROZZO, Chief Engineer of Grant's Mexican Southern Railroad, says the time for the construction of the road has been extended six months, and that both the General Government and the Government of the States through which the road passes have offered subsidies.

THE New River Railroad, a connection of the Norfolk and Western Railroad, running into the heart of the rich mineral regions of Southwestern Virginia, which was formally opened for traffic on the 17th inst., will for the present only run trains from the junction with the Norfolk and Western, at New River, to Wenonah, 28½ miles, and no trains exclusively for passengers will be run. Passenger coaches will be attached to freight trains for accommodation of travel. It is not expected that the road will be open through to Pocahontas, its western terminus, before the first of March, when the movement of coal will begin.

AT a meeting of the directors of the Northern Pacific Railroad Company on the 18th inst., Gen. T. F. Oakes, the vice-president, presented a report of the progress of work. He said the track from the east had reached a point 9¾ miles west of Livingston, at the head of the Yellowstone Valley, and from the west it was laid to the 345th mile-post east of Wallula Junction. A little over 300 miles of road remained to be finished, of which 250 miles were graded and ready for the track. The Mullen tunnel, near Helena, Montana, was pierced 2,765 feet, leaving 1,085 to be cut. Work in the Bozeman tunnel had advanced 694 feet, and 2,916 remained to be cut. A temporary track was being laid over the mountains at this point pending the completion of the tunnel. The coal-bunkers at New Tacoma, holding 3,000 tons of coal, from which shipments to San Francisco would be made, were finished. The total number arriving at Portland last year in excess of the departures was 15,113. The estimated grain surplus next season for Oregon and Washington Territory was from 150,000 to 200,000 tons. There was an increasing cattle business in western Washington Territory and northern Idaho. The inaugural trip to Alaska would be made in June. The steamers would start from Portland.

THE following well-known contractors, with a full force of men and horses, are vigorously engaged in the work of construction on the Canadian Pacific Railway between Prince Arthur's Landing and Nepigon: 1st section, Syndicate; 2d section, Macdonell & Fay; 3d section, Mathew & Brown; 4th section, Conmee & Maclennan; 5th section, Dwyer & Doyle; 6th section, Marvin Burke. The principal structures on the line will occur at the following crossings: Nepigon, Trout Creek, Sturgeon, Woll, Pearl, McKenzie and Current rivers. Some of these spans will be very considerable, ranging from 220 feet, with trestle or other approaches, down to at least 80 feet, on rock base.

ORGANIZATION.

AT the recent annual meeting in Portland, Oregon, of the Oregon Short Line Railroad Company, the following persons were elected directors: S. H. H. Clark, Thomas L. Kimball, Andrew J. Poppleton, D. P. Thompson, B. J. Pengra, M. S. Burrell and Ellis G. Hughes.

AT the annual meeting of the stockholders of the Portland and Odgensburgh Railroad Company, held in Portland, Me., on the 16th inst., the old board of directors was re-elected, with Samuel J. Anderson as president, Charles U. Foye clerk, John W. Dana treasurer, Jonas Hamilton, superintendent John F. Anderson chief engineer.

AT an adjourned meeting of the stockholders of the Cincinnati Northern Railroad Company, held in Cincinnati on the 16th inst., the following directors were elected: Gabriel Netter, Ed-

ward Colston, B. J. Bachmann, Nelson Perin, Albert Netter, H. D. Hyde, G. W. Ballow, J. N. Kinney, E. B. Phillips, Edgar M. Johnson and John Ryan.

THE directors of the Delaware Western Railroad Company have elected W. H. Ijams treasurer, W. T. Thelin auditor, and John C. Farra cashier. Messrs. Ijams and Thelin hold corresponding offices in the Baltimore and Ohio Railroad Company. In February the Delaware Western will consolidate with the newly organized Baltimore and Philadelphia Company.

THE directors of the Woodstock Railroad Company, recently elected, are: Albert G. Dewey, S. S. Thompson, Frederick Billings, Lewis Pratt, F. N. Billings, Justin F. MacKenzie, Chas. S. Raymond. The officers are: President Frederick Billings, vice-president Justin F. MacKenzie, clerk Charles M. Marsh, treasurer and superintendent James G. Porter.

THE directors of the Philadelphia and Gray's Ferry Passenger Railway Company, elected on the 16th inst. are: Matthew Brooks, J. Crawford Davis, Thomas Woodhouse, Oliver Harkinson, J. Hicks Conrad, James McManes, William Dulles and Richard Dale. The officers are: President, Matthew Brook; treasurer, J. C. Dawes. The number of passengers carried was 2,684,496.

AT the annual meeting of the Greensburg, Vernon and Rushville Railroad Company, held at Greenburg on the 20th inst., the following directors were elected: M. E. Ingalls, B. S. Cunningham, A. R. Forsythe, of Cincinnati; W. W. Hamilton, J. E. Robinson, of Greensburg; F. Hall, Rushville; Horace Scott, of Louisville. The directors elected Horace Scott, president; C. Ewing, secretary; E. F. Osburn, treasurer.

THE stockholders of the Baltimore, Pittsburgh and Chicago Railroad Company, at their annual meeting held in Pittsburgh on the 15th inst., elected the following board of directors: Wm. E. Schmertz, S. Beymer, Wm. Vankirk, D. W. C. Carroll, John G. Holmes, Charles L. Caldwell, F. B. Laughlin, Joshua Rhodes, J. D. Long, James M. Bailey, Pittsburgh; and Jacob Frick, John Zimmerman, Wooster, O., James S. Robinson, Kenton, O. President Wm. E. Schmertz.

AT the annual meeting of the Lehigh Valley Railroad Company, held in Philadelphia on the 16th inst., the following directors were elected: Charles Hartshorne, R. Asa Packer, William L. Conyngham, Ario Pardee, Wm. A. Ingham, George B. Markle, Robert H. Sayre, James L. Blakslee, Elisha P. Wilbur, Joseph Patterson, Garrett B. Linderman and John R. Fell. The officers are: Harry E. Packer president, Chas. Hartshorne vice-president, I. Chamberlain treasurer, J. R. Fanshaw, secretary.

AT the annual meeting of the stockholders of the New York, Ontario and Western Railroad Company, on the 17th inst., the following directors were elected for the ensuing year: Edward F. Winslow, C. F. Woerishoeffer, Horace Porter, Theo. Houston, C. N. Jordan, Henry Amy, Wm. Adams, George B. Greer, Charles J. Canda, Thos. C. Clarke, Alex. Taylor, Howard Mansfield and J. L. Nisbet. At a meeting of the directors on the 18th inst., the following officers were chosen: Edward F. Winslow president, Theodore Houston vice-president, Conrad N. Jordan treasurer, John L. Nisbet secretary and assistant treasurer.

AT the annual meeting of the stockholders of the Illinois and St. Louis Railroad at Belleville, Ills., on the 22d inst., the following directors were elected: Joseph W. Branch, Thos. McKissock, Adolphus Meier, John D. Perry, W. A. Hargadine, George Knapp, C. S. Greeley, A. C. Hucke, G. A. Koerner, Russell Hinckley, B. F. Switzer, T. Rainey, J. B. Beuchler, E. H. Wangelin, Thomas Winstanley. The board organized by electing Joseph W. Branch, president; Thomas McKissock, vice-president and managing director; P. T. Burke, secretary and treasurer, and C. H. Sharman, general superintendent.

THE stockholders of the Maryland Central Railroad Company held their annual meeting in Baltimore on the 15th inst., and re-elected the old board of directors, as follows: W. H. Waters, Wm. Gilmore, Thomas Armstrong, Charles W. Hatter, G. O. Wilson, John M. Dennison, Caleb S. Taylor, Henry R. McNally, Joseph M. Street, James P. Street, Caleb J. Moore, Eli Tucker, all of Maryland, and Foulk Jones, of York county, Pa. W. H. Waters was re-elected president; Wm. Gilmore, vice-president; S. G. Boyd, secretary, and Caleb S. Taylor, treasurer, *pro tem.* S. G. Boyd was re-elected superintendent.

AT the annual meeting of the Citizens' Passenger Railway Company, of Baltimore, Md., held on the 15th inst., the following board of directors was re-elected as follows: Oliver A. Parker, George V. Keen, Joseph Friedenwald, Frederick Rice, Jacob Hecht, Hervey Shriver and John E. H. Boston. At the meeting of the directors immediately after, the following officers were re-elected: James S. Hagerty, president; G. V. Keen, treasurer, and John E. H. Boston, secretary. The reports of the secretary and treasurer showed the road to be in a flourishing condition. It is understood that the company contemplate the extension of their lines, and will ask permission therefor of the council when it assembles.

Railroads and Steamships in Japan.

THE railroad built from Sapparo to the seacoast in Yesso, by Col. J. A. Crawford, has proved so economical, and at the same time so satisfactory, that it is reported to be the intention of the Japanese Colonization Department to adopt the American system of railroad building in the northern part of Japan. An important commercial undertaking has just been consummated in Japan, in the shape of the Union Steamship Company. The company is backed by private and Government capital. It is intended to develop the trade of Japan, particularly at ports which have hitherto suffered from lack of steam communication. The capital stock is 8,000,000 yen (dollars), half subscribed by the Government and half by Japanese merchants and farmers. The latter part has already been paid in. The company's fleet will at first consist of forty steamers, about twenty of which will be running within eighteen months. The company will extend its operations to Hong Kong and the Chinese ports.

Railroads of Maine.

DURING the past year the following Railroad companies have been organized in Maine under the General Railroad Law of that State:

Kennebunk and Kennebunkport Railroad—To extend from a point near the drawbridge dividing Kennebunk and Kennebunkport Village, to a point on the line of the Boston and Maine Railroad near the depot of said railroad in Kennebunk. Length about 4½ miles; gauge 4 feet 8½ inches.

Monson Railroad—Extending from the depot of the Bangor and Piscataquis Railroad, called Monson Station, in the town of Abbott, to the village of Monson, through the towns of Abbott and Monson. Length, about 6 miles; gauge, 2 feet.

Green Mountain Railway—Between some point in the town of Eden or Mt. Desert to the summit of Green Mountain in Eden. Length, about 1 mile; gauge, 4 feet 8½ inches.

Bridgton and Saco River Railroad—This corporation organized in 1881, but did not locate its road till last year. It is now nearly completed from Bridgton Centre to Hiram, a distance of about 15½ miles. Gauge, 2 feet.

Regarding the management of the various railroad lines in the State during the past year, the annual report of the Railroad Commissioners, about to be issued, will say that all of them have been found in good repair and safe, and most of them in a high or advanced state of improvement, especially the principal lines. The policy of the officers seems to have been to have the improvement in track, rolling-stock, station houses, depot buildings and grounds adjacent thereto keep pace with the business prosperity of the roads. Such a policy cannot be too highly commended, and will not fail to be appreciated by the more observing and enterprising of the traveling and business public, and should be by all. The interests of the companies and of the people are reciprocal and mutual, and the intelligent and well-informed officials comprehend fully this fact. They have had the good sense to adopt and practice a liberal policy in their transactions with the patrons of their respective roads, and this has had the effect to disarm, in a measure, any opposition and prejudice against the roads and their management, so that the cry of "monopoly" or "oppression" is seldom if ever heard. With the exception of the county of Aroostook and parts of the counties of Hancock and Washington, the people and business enterprises are now well provided with railroad facilities by a system of connecting roads extending into every county and to nearly all parts of the State, and which may justly be regarded as among the safest, most honorably managed and efficiently operated of any in the country.

The remarkable exemption from any great and disastrous railroad casualty in this State still continues. Considering the large number of persons conveyed upon these roads each year, particularly upon the Maine Central, that during the summer season runs so many and such large excursion trains, this exemption from serious accident or catastrophe is little else than marvelous. The vigilance and fidel-

ity of the subordinates, as well as the faithfulness and efficiency of their superiors, merit special notice and the highest commendation.

Attention is called to the fact that the general railroad law in its practical workings is in several respects defective. For instance, the Bangor and Katahdin Iron Works Railway was organized to build a narrow-gauge road, but finally concluded to build to the standard gauge, when it was found there was no way under the general law to make the change except by commencing anew. A change is recommended by the Commissioners to meet such a case and another one mentioned.

From a tabular statement included in the report it appears that there are now 1,065.39 miles of railroad in this State, with a total length of 3,066.68 of the whole line operated. Thirty-nine companies are represented, though twelve of these have leased their lines to other roads.

Chicago City Railway Company.

At the annual meeting of the stockholders of the Chicago City Railway Company, held on the 10th inst., C. B. Holmes, president, submitted a report, in which he said that on the 28th of January, 1882, the cable cars first began running between Twenty-first street and Madison street; now the length of cables run is as follows: State street, from Twenty-first street to Madison street, 20,200 feet; from Twenty-first street to Thirty-ninth, 23,792; Wabash avenue, 23,608 feet; Cottage Grove avenue, 27,770 feet; State street loop, 4,361 feet; Wabash avenue loop, 4,339 feet; Twenty-second street, 2,684 feet; a total of 106,844 feet, or 20½ miles.

In addition to the forty-two grip cars finished early in the year for State street, there have been constructed in the shops of the company ten more grip-cars for State street and fifty for Cottage Grove and Wabash avenues, and fifty large and handsome passenger cars have been built, the best ever constructed by the company. After the completion of the cable system on State street there was a marked increase in the volume of travel, and the facilities, although enlarged in anticipation of such demand, proved inadequate. The growth of the lines has also been considered, and to meet these pressing needs the company is now constructing fifty more large passenger cars and fifteen grip-cars, which will be pushed to completion as rapidly as possible.

The company now operate 55 miles of track, the usual repairs have been prosecuted with promptness, and the road is in good condition.

The number of miles run during the year was 2,159,170 by cable and 2,151,064 by horses, and 38,386 by the Hyde Park dummy. From this it will be seen that, while the company has operated fifty-five miles of road, the car movement has aggregated 4,448,620 miles. Almost half the entire mileage was performed on the nine miles of cable road. Had the same work been done with horses it would have required 880 head, and is something of an indication of the facilities already furnished by the cable system to the public.

Mr. Holmes gives a detailed statement of the many drawbacks and hindrances encountered in introducing the cable system, and describes many of the experiments tried. He says: "While the transmission of power by means of wire ropes is very old, the adaptation of cables to street-car locomotion is comparatively new, limited heretofore to San Francisco, and there under conditions which did not necessarily determine many important problems. At the outset of our operations we found that the splice used in San Francisco would not answer our purpose, owing, probably, to the much heavier work performed by our road and the greater length of our cables. Under the supervision of the manufacturers of our rope a splice was adopted which they considered the best, but a short trial proved it a failure. The San Francisco splice was then tried, but it also failed. Mr. Nash, who has had charge of our ropes, then introduced a method of his own, and with anxious interest its operation was watched until long-continued use has determined its advantage and success. The difficulty was to secure a splice which should not increase the size of the rope and expose the splice to abrasion by the grips, which should not draw out when a heavy strain was brought to bear, nor yet allow the ends to loosen when the action of the cars produced a slackness of the rope, one also which should not allow one strand to creep ahead of the others, and projecting up for the grips to cut or tear it up. If nothing else had been done during the season in this department than to discover a successful method of treating this important part of the system, it would have been a season well spent, for it is vital to the operation of the road. Another important matter was the handling of the cables so as not to produce crystallization. A new rope has been made so brittle in San Francisco by a short use as to snap like a glass when struck with a hammer. During all our operations, so far, we have not discovered any commencement of this much-feared condition."

In conclusion Mr. Holmes says: "From the experience of the last year there seems to be good ground to expect reasonably satisfactory returns from the investment. The public has hoped to find in the cable system seats for all or nearly all, and speedy transit. The former will be realized by increasing the number of cars, which is being done with energy, and the latter can be attained the moment the cars are supplied with automatic brakes and safety fenders, to do which every possible effort is being made. The whole system will work with greater ease by giving to the cables quicker motion, and this will be done as soon as the cars can be stopped quickly and with certainty, and so protected as to reduce accidents to the minimum."

A reporter learned from the company that the expenditures in and about the cable system have been between $2,000,000 and $3,000,000.

S. R. Cobb, ex-president of the company, when seen by a reporter immediately after the directors' meeting, said: "I am well pleased with the progress which our road has made during the last year. The cable system is working splendidly, and we consider it to be a grand success."

Daniel A. Jones, who is also one of the directors, said, in answer to the questions: "I consider the cable-car system to be a great success. We are all satisfied with the progress that has been made thus far. To be sure we have had our backsets, and there have been many apparently insurmountable difficulties to overcome, but I think that the public will agree with me that we spare no pains to add to their comfort. As regards new extensions, I cannot say exactly yet. We shall commence work on the Archer avenue extension of the cable at an early date. We do not fear that the severe weather is going to affect our cable much."

National Exposition of Railway Appliances.

From the London (Eng.) Railway News.

We have pleasure in bringing to the notice of railway managers in this country a scheme for an International Exhibition of railway appliances, to be opened in Chicago about the middle of June next, under the auspices of the leading railways and manufacturing companies of the United States. We have of late years heard a good deal about the superiority of American designs and construction, and we trust that our home railway companies will not be backward in accepting the challenge given in the forthcoming Exhibition. Whatever the result of the competition may be, so far as comparative merits are concerned, there can be no doubt that much advantage would result to the manufacturers of both countries from a friendly and candid examination of the different systems in force, and the various methods adopted for arriving at the same end, or securing the most suitable and economical appliances and work. The promoters of the Chicago Exhibition seem determined that it shall be on a scale worthy of its character of international, and with this object they have secured buildings in the center of the business part of Chicago, convenient to the depots of the various railways. Very favorable rates will be granted by the railways of the country for the transportation of articles intended for the Exhibition, the net proceeds of which will be devoted to benevolent purposes connected with the railway service. Presuming that British work is duly represented, it would be a graceful act of international courtesy if some proportionate share of this benevolence were allotted to our Railway Benevolent Institution or some other representative society.

The Marquis of Lorne and the Princess Louise and their party arrived at the Exchange and Ballard House, Richmond, Va., about 10 o'clock in the evening of the 15th inst. They left Louisville, Ky., by the Chesapeake and Ohio Railway at 9 o'clock in the evening of the 14th inst., and traveling rapidly crossed the Ohio River at Huntington, W. Va., on the following morning. The trip through West Virginia, up the western ascent of the Alleghanies passing Charleston, the West Virginia coal fields, the White Sulphur Springs and down the eastern declivity of the Blue Ridge was greatly enjoyed by the party. They had a glimpse of Monticello, the home of Jefferson, and other of Virginia's historic places as they proceeded, and ran quietly into Richmond on time, ahead of the regular mail, without any mishap.

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WE invite railroad officers to send us notice of elections, transfers, appointments, resignations, etc.; and all our readers would oblige us by furnishing for our columns any items of personal information, which may come to their knowledge, and are adapted to this department. We aim to record all new railway enterprises in the United States and Canada, and to note the progress of construction on all new roads and extensions; and we request all concerned in railway building to give us early information regarding the above, that our reports may be as complete as possible.

Subscribers are requested to report to our office any irregularity in receiving the JOURNAL.

Contributed articles relating to Railroad matters generally, Mining interests, Banking and Financial items, Agricultural development, and Manufacturing news, by those who are familiar with these subjects, are especially desired.

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ARE RAILROADS PUBLIC HIGHWAYS?

IT will be remembered that during the hot months of 1882 there occurred in New York City what was popularly called by the newspapers a "Freight-Handlers' strike." The large number of men employed by the New York Central and Hudson River and the New York, Lake Erie and Western railroad companies in loading and unloading merchandise into and from the cars of the companies, combined to demand an increase of their wages, which the companies refused to grant; and thereupon these laborers simultaneously abandoned their work, without notice, and refused to allow other laborers to take their places and proceed with the work without molestation. The result was great loss to the railroad companies, and corresponding suffering to merchants in this city who desired to ship goods, and to other merchants in the interior cities and towns who very much desired to receive them. Of course there were not wanting some in the cities who contended that the railroad companies should have yielded to the demands of the strikers for increased wages rather than subject their customers to annoyance or loss. Among these censorious people of course were to be found the spokesmen of the so-called anti-monopolist or agrarian party, who prosper by making believe that the law can be used to despoil corporations of their property without their consent and without compensation. Some of the dissatisfied firms, in order to test their rights and the responsibility of the companies, brought a suit in the State courts, which was disposed of by Justice HAIGHT in favor of the position of the railroad companies. The cause was appealed to the General Term, and has been argued by Attorney-General RUSSELL, assisted by Col. E. C. JAMES on behalf of the people, SIMON STERN, the attorney of the Thurber party, appearing in the case also; Judge SHIPMAN and ex-Senator ROSCOE CONKLING appearing on behalf of the companies. Judge DAVIS delivered the opinion, which is very elaborate, and will attract attention among corporation counsel all over the country; as it discusses a very much disputed point as to how far the State can interfere with the practical operation of railroads.

The full Court is said to concur in the opinion which reverses the decision of the court below, and seems to be, so far as it goes, an attempt to stretch the power of the State over the railroad companies further than has yet been established. When a judge gives his decision, there is nothing to do but either to submit, or to appeal to a higher court. But when a judge gives his reasons for a decision it is competent for every one to examine his premises and his reasonings to see if they are conformable to the rules of logic, and conducive to the public welfare. In order that his position on this intricate subject may not be misunderstood, we append the following extract from the opinion:

"Railroads are in every essential quality public highways, created for public use, but permitted to be owned, controlled and managed by private persons. But for this quality the railroads of the respondent could not lawfully exist. Their construction depended upon the exercise of the right of eminent domain which belongs to the State in its corporate capacity alone, and cannot be conferred except upon a 'public use.' The State has no power to grant the right of eminent domain to any corporation or person for other than a public use. Every attempt to go beyond that is void by the Constitution; and although the Legislature may determine what is a necessary public use it cannot by any sort of enactment divest of that character any portion of the right of eminent domain which it may confer. This characteristic of 'public use' is in no sense lost or diminished by the fact that the use of the railroad by the corporation which constructs or owns it must from its nature be exclusive. That incident grows out of the method of use which does not admit of any enjoyment in common by the public. The general and popular use of a railroad as a highway is therefore handed over exclusively to corporate management and control, because that is for the best and manifest advantage of the public. The progress of science and skill has shown that highways may be created for public use of such form and kind that the best and most advantageous enjoyment by the public can only be secured through the ownership, management and control of corporate bodies created for that purpose, and the people of the State are not restricted from availing themselves of the best modes for the carriage of their persons and property. There is nothing in the Constitution hostile to the adoption and use by the State of any and every newly developed form or kind of travel and traffic which have a public use for their end and aim, and giving to them vital activity by the use of the power of eminent domain. When the earliest Constitution of our State was adopted railroads were unknown. The public highways of the State were its turnpikes, ordinary roads and navigable waters. The exercise of eminent domain in respect to them was permitted by the Constitution for the same reasons that adapt it now to the greatly improved methods of travel and transportation, and in making this adaptation there is no enlarged sense given to the language of the Constitution so long as its inherent purpose—the creation of public uses—be faithfully observed."

It will be seen that the ground upon which Judge DAVIS rests the right of the State to interfere in the conduct of railroad transportation, and to prescribe the duties of the company both as to the compensation they shall receive for transportation and as to the wages they shall pay to their employés, is that of the right of eminent domain which is conferred upon corporations for quasi-public use. There is no question but that the power of eminent domain can be used only for the public use and benefit. The authority given to railroad or canal corporations to pass through private lands, tear down fences, and remove the superincumbent vegetation, rests upon their public utility. Admitted that the right of way so obtained cannot be used for a thoroughfare, and that the public cannot be shut out from using it in the manner and time contemplated in the char-

ter; but it does not follow that the engines, the cars, the seats, the stations and buildings of the company are therefore at the mercy of the Legislature. Here is the fundamental mistake of many Judges who approach this subject. They confound the way and right of way with the implements and labor of those concerned in transportation. There is the same difference between the right of passage up and down a navigable stream and the vessels which ply upon it and the labor performed upon those vessels, as there is between the right of way of the railroad and the trains which run over it.

The reasoning of the Court of the General Term, that railroad corporations have been chartered and have undertaken to perform duties for the public in the ordinary legitimate and regular course of their business, is perfectly correct; that they have duties to perform in that respect is perfectly clear; but it is a wide step from that to say that the companies shall not receive as compensation what the service is really worth, or that they shall pay to any particular class of their employés more than the real value of the service rendered. There is a great confusion of mind growing out of the fact that an analogy is traceable between the functions of a railroad and those of a turnpike, a ferry, a grist-mill or wayside inn. Many of these in England, whose common law has given ours this squint, were derived from soverign pleasure, and were to be used with reasonable regard for the public convenience. But it is stretching the doctrine too far to suppose that a party who puts up an elevator for the accommodation of his customers is subject to have his business inspected and interfered with, simply because it is of general public concern. The same doctrine, if pushed to its extremes, would justify interference with the baker or the farmer, the miner or the fisherman. It will not bear pushing any further; it is time there was a retracing of false steps.

The decision just rendered will, no doubt, be appealed to the Supreme Court, and may be expected to be reversed. The transportation interests of the country cannot be conducted upon any such basis as that suggested by Judge Davis.

SOME new and interesting features in the condition of the horse-car service on one line in New York City should be mentioned, as not only creditable to the enterprise of the company introducing them, but affording matter proper for imitation by other lines, so far as judicious and practicable in each individual case. We refer to the improvements on the Second Avenue Railway, which are three in number. In this bitter weather, the statement that the Second Avenue horse-cars are comfortably heated, conveys an invitation to which the public who can use the line without going out of their way considerably, numerously respond. The stove is placed under the seat, and therefore does not occupy any of that space in the car usually devoted to the accommodation of passengers. As an experienced gentleman points out in another place, there is danger in heating street-cars by the use of stoves, but we have yet to learn that those of the Second Avenue Company have been at all endangered by the innovation, which, so far as we have been informed, works well. Our correspondent concedes the possibility of making provision for heating cars by means of stoves, without the danger which usually accompanies their presence in crowded vehicles; and he will permit us to add, that possibly the company named have succeeded in preventing that danger. To change the subject: On the Second Avenue line there is no opening and shutting of the front door of the car while in service, and consequently, there are no miserable and dangerous draughts, to excite the wrath, chill the blood and threaten the life of the unoffending passenger. Lastly, the conductor wears a badge during the whole time while on duty, and is certainly under recognition by the passenger as is the policeman on his beat. Manifestly, therefore, the necessity of any kind of fuss with this official, in case of misunderstanding with him, is prevented; and any disposition to impertinence and undue dignity on his part, very properly is checked by his consciousness that his number is distinctly knowable by all the persons under his care. The three innovations mentioned suggest matter for consideration by all street railroad men anxious to provide improvements on their lines.

Color-Blindness—A Rejoinder.

BY S. S. HERRICK.

AN article entitled "Color-Blindness Once More" appeared in this journal Dec. 30th, which contains several erroneous statements and conclusions. Some of its readers are too well informed to be misled by it, but it is to be feared that many might regard it as unanswerable, if left unchallenged. I have waited in the hope that some one would undertake the task, and now, concluding that no one else will give it attention, shall proceed to notice the weak points *seriatim*.

It is rather broadly intimated in the first paragraph, that the experts who are laboring to interest Congress in the matter of control of defective vision are aiming at "a good plum," which is a gratuitous and unwarrantable assumption. These experts are men of established reputation, successful in their private business, and not mere adventurers. They claim no invention or discovery, but ask the recognition of established facts in adopting additional precautions for the safety of persons and property while in the care of common carriers.

The writer of the article declares that "what the people are most interested in, and what they are willing to pay for, is to know to what extent (if any) the public service is injured and the lives of people endangered on land and water by the employment of these men." Very well: but how is this to be known, without examining the men? Then if any be found defective, are they to be retained in responsible positions? Of what use the knowledge, unless it lead to some practical and useful result?

It is asserted that ophthalmic surgeons have discovered large numbers of color-blind men in positions of great responsibility, "but have not succeeded in showing that a single life or a dollar's worth of property has been destroyed in consequence of color-blind employés on railways or as pilots." I am not prepared to prove or disprove this statement, but would suggest that the experts have not had fair opportunity to assist in the investigation of disasters on lines of traffic.

In the next paragraph we are offered the fallacy that a man with perfect vision may become confused and then have no advantage over the color-blind man. Certainly, for that one occasion; but Mr. Huntington would hardly claim that a man habitually subject to confusion of his faculties should be put in a responsible place or allowed to remain there.

He is apprehensive that an expert might occasionally happen to be defective himself, and then nobody could possibly find it out! There is evidently some sacred mystery about this expert notion, as inexplicable as one's religious faith. Seriously, however, I never supposed that a man would undertake the office of examiner from an interior conviction that he had a divine call for it, which no one had a right to question, but presumed that the first step was to undergo an examination by an expert himself previously tested in the same way; and it may be presumed that the examiners, having reputation at stake, would not neglect a duty to themselves, which they would impose as a condition on others.

The following contains too gross an error to pass without notice. "Men who are color-blind will not give the proper name to these colors, but they know exactly what they mean, and that would seem to be all that is required." In the examination men are not asked to name the colors, but to recognize them by comparison with a standard. If they know what the colors mean, they are not color-blind, though unable to name them. Moreover, no one is to be condemned without examination by flags and lanterns, if he demands this test. In careful hands the worsteds detect him, and the flags and lanterns confirm the previous test, if the man has no prompting.

No expert fit to be an examiner would do a man injustice in applying the tests, and no humane railroad official would turn adrift a worthy man for a defect growing out of no fault of his own. It would be easy enough to find a suit-

able place for him, with a company important enough to organize a medical department. The wrongs and hardships which Mr. Huntington apprehends presuppose bad men for the exercise of the functions of control, both the medical experts and the managing officials. No mathematician is needed to estimate the probability of such a concurrence.

His closing sentence grants as much as experts claim, though not in exact terms: "When a man gets old he should be examined for amanrosis, and in fact impaired vision should be looked for in persons of all ages, but when signals can be seen at a proper distance and their meaning understood, what more do we want in the line of vision?" Nothing more, of course; but we want no guesswork about it, and want the business in competent hands.

The Heating of Street-Cars.

In a letter addressed to the editor of the American Railroad Journal, Mr. C. B. Clegg, of Dayton, Ohio, a gentleman largely interested in the street-car service of that city, says:

"I take it for granted that you favor the heating of street-cars. In this I not only think you are wrong, but such favor to emanate from New York, where legislation has been so active to promote the service in a sanitary manner, is somewhat surprising to me. I remember a few years ago, when an attempt was made to introduce stoves into the street-cars of your city, that there was a loud and prolonged out-cry against them, some of your best papers making strong protest, supported by the very best arguments why they should not be used. The space at best is limited, and the traffic so precarious and uncertain as to numbers and cleanliness, that, in my judgment, it is impossible to properly heat the car to the comfort of all; and I also believe the time is near at hand when the Boards of Health, in all cities where stoves are used in street-cars, will take the matter in hand, and by proper legislation, and for the best interests of the public, have them excluded.

"To look at the matter in as broad a sense as possible, there may be rare cases where stoves are admirable. Where cars run long distances into the suburbs or into the country, or sometimes from one town to another, in short, in all such cases when the traffic is not liable, from the nature of the circumstances, to suddenly and unexpectedly increase beyond the provision for it, it is then possible, probably, to so regulate the heat and atmosphere as to produce the least harm.

"I believe as a rule, street railway companies endeavor to provide ample accommodations for their travel, but in running through the crowded streets of cities there are many circumstances, over which they have no control, which tend to suddenly and indecently crowd the cars. Take, for instance, the Third Avenue line of your City, which upon its rush trips sends out from its stables a car every ten seconds, and yet they will be crowded at times. But whether this is the fault of the company or the people, one can not help but contemplate with a shudder, as he views it, what the probable consequences might be, if in addition to the promiscuous crowd, there was a stove in the car adding fuel to the already dangerous fumes.

"I give much time and thought to street railroading, and I desire, as far as lies in my power, to give our patrons the very best service possible, but I have yet to be convinced that stoves in the cars will, in any way, help me to that end. If I am wrong I can not known it too soon; neither would I allow, if I am making a mistake, any unnecessary delay in correcting it."

Steel and Cast Steel.

The growing importance and increasing employment of steel in machinery and ship building, and the frequent use of the term in speaking or writing of mechanical industries, have tended to confuse the popular ideas as to what steel is, and what steel was. The word itself conjures up ideas of cutting implements mainly, of a metal capable of being so hardened and tempered as to cut other metals, rocks, and almost all mineral substances, as well as to work wood and a hundred other soft materials. And when steel is spoken of as being used for shafting, for heavy castings, for plates of which to build up the sides of ships, for railroad rails, and similar purposes, the ordinary and unmechanical mind is confused, and doubts the economy and the advantage of using the material for such purposes. Perhaps a brief description of processes may serve to make distinction.

For the production of cast steel the best Swedish iron is used, that known to the trade as "Danemora iron" being generally employed, although iron possessing similar properties but from other localities is largely used. Bars about three inches wide by five-eighths of an inch thick are of a handy and much used size. These are packed in air tight chambers with fine charcoal, and so arranged that no two bars touch, and fires are kept up from nine to fourteen days by means of furnaces of anthracite coal. Bituminous coal also has been and is used with satisfactory results. Test bars may be drawn from time to time, until by the judgment of an experienced workman the cementation is complete. This roasting of the iron in combination with charcoal imparts to the iron a certain degree of carbon as compared with the other constituents, that has the effect to totally change its nature.

When removed from the cementation furnace the bars are covered with blisters, hence the name "blister steel" for steel in this condition. Formerly—within forty years—this blister steel was largely used by blacksmiths for purposes for which only cast steel is employed. In the "relaying" of axes, for instance, it was used, the quality of the steel being greatly improved by repeated hammerings after heatings.

The bars of blistered steel are very brittle, and are broken up into pieces of about one pound weight or less, put into crucibles of plumbago, and subjected to an enormous heat for from two to two and a half hours, and then poured into cast iron molds of cylindrical form inside, the ingot thus cast weighing about fifty pounds usually, although much larger ingots are made if the after nature of the work requires it, or the resultant product demands. If the top of the ingot, while in a fluid state, does not sink in the center (the molds being placed on end while the steel is poured), it is evidence that the casting is unsound, and no after reheating and hammering can rectify the fault, the only remedy being to break up and remelt the honeycombed steel.

The ingots are reheated after being cast, and subjected to the hammer and then to the rolls. And in the form of flat and round bars, and rods, and plates, this product goes out to the world as cast steel, the great cutting material.

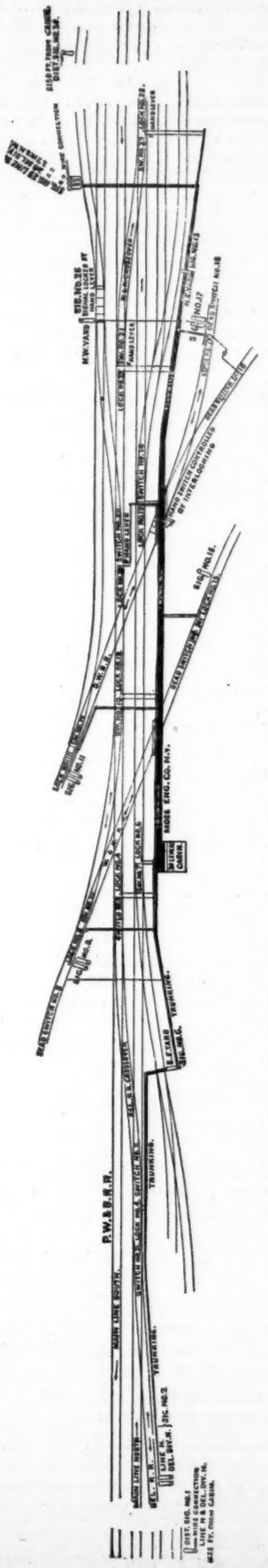
For the production of the steel used for building and common mechanical purposes and for railroads there are several processes, but they each bring about a similar result, and except for details of manipulation and employment of differing means, use the same materials. In some cases the steel is made from the ore, but in most from the iron (cast). The Bessemer process will probably stand as a sufficiently general type of the principle of "converting" to enable the reader to understand the difference between "steel and cast steel." In the conversion of iron into common, or Bessemer steel, the iron used is pig, or cast iron, and not wrought iron in bars. This iron is selected for the quality of its ore, and so mixed as to aid in the process of conversion and to produce satisfactory results. These particulars are unnecessary for the purposes of this article.

The iron is melted in a cupola just as it is in any iron foundry, and when melted is run into an immense pear-shaped or pitcher-shaped vessel suspended on hollow trunnions, through which a powerful blast of compressed air is driven by means of blowing cylinders at a pressure varying from fifteen to twenty-five pounds per square inch. This pressure is varied during the process, which for seven tons of melted iron would require fifteen or twenty minutes. This blast of air rushes through the boiling metal, burning out the phosphorus and sulphur, and a portion of the carbon, usually about 10 per cent. The loss of carbon is made up by the addition of a certain amount of *spiegeleisen* to the ingredients. "Spiegeleisen"—"mirror iron"—is an iron containing an unusual amount of carbon.

The converters are made of thick boiler iron, and lined with a cement of ground flint and quartz, fire clay not being sufficient to withstand the intense heat generated by the union of the oxygen of the blast with the sulphur phosphorous, and carbon of the metal. The end of the converting process is determined by the color of the flame rushing from the top of the converter. At first, when the blast is first put on, it is blue and smoky, afterward red, then graduating to yellow, and at last to pure white.

When the process is completed the blast of air is shut off, the immense pitcher is turned on its trunnions, its content poured into large ladles, which empty into iron molds, casting huge ingots, sometimes of a weight of 3,000 pounds. The after working of this Bessemer steel is similar to that of cast steel, a reduction by hammer and rolls.

It will be seen from these general descriptions that the production of "decarbonized," "crude," "low," or "Bessemer" steel and that of cast steel are different in materials used, methods employed, and in results reached.—*Scientific American.*



PLAN OF INTERLOCKING SWITCHES AND SIGNALS AT UNION JUNCTION, WILMINGTON, DELAWARE.

Interlocking Switch and Signal Apparatus.

We purpose in this and succeeding articles, to give an account of the Interlocking Switch and Signal Apparatus manufactured by the Pennsylvania Steel Company, Steelton, Penn. This apparatus possesses features which give it interest widespread as the use of railroads. A few introductory remarks on Interlocking switches and signals are desirable.

From the earliest days of railroads the contrivance of signals by which to instruct the persons in charge of trains as to the condition of the tracks, and to regulate the movements of trains, has engaged much attention, and in proportion to the number of trains passing a given point, the signal be ome important. Preliminary to signals, the switches and means for operating and controlling them claim attention; and the fatal facility with which the switches and signals by the usual method of operating them can be made to conflict and to cause enormous loss of property and life, despite the most complete codes of regulations, has been demonstrated so many times that the importance of a method of operating switches and signals that will ensure safety will be universally admitted. That such a system may also be made to reduce the cost of handling switches, should also receive due consideration. In fact it was the effort to reduce the cost of working switches and signals by concentrating the levers of a number of them so that one person could attend to them which produced after passing through many changes) the improved system now called the Interlocking system.

The origin and progress of the Interlocking system are detailed in an interesting manner in "Barry's Railway Appliances" (a valuable English work published by Appleton), and will be found well worth perusing. As early as 1847 English railways began to concentrate switch levers and signal levers together, so that one person could conveniently work a number of switches and signals; and the economy and convenience of such an arrangement led to a general adoption. The danger of pulling the wrong lever by mistake soon became evident, and many ways of preventing such mistakes were ineffectually tried until Mr. Saxby, in 1856, introduced a system of combining the levers and connecting them in such a way that the signal levers could not be moved until the switches were set correctly, and the term interlocking was suggested by the locking mechanism employed. This term is now understood to apply to a system by which switches and signals are worked, from some point where a number of levers can be concentrated, in such a manner that no safety signal can be given for any track until the position of the switches is such that trains can go safely; and when the safety signal is displayed, none of such switches can be moved until the signal is made to indicate danger. The trains being moved in such cases only in obedience to signals.

The objects aimed at in such systems are that nothing may be left to the judgment of the switch operator, that following the obvious safety rule in opening a given course of moving switches first, locking the same next, and last of all, setting the signals to go ahead which shall lock fast all the levers operating conflicting signals so that they cannot be operated; that a certain track being indicated to the operator to be opened for the passage of a train, the changing of switches and signals may so far as possible begin at the point farthest from said train, and end with the signal nearest to it; and that in all cases said signal shall be locked to indicate danger until the course of track to be opened shall be in order, and said signals be set for the train to proceed, and that the setting of said signal to proceed shall lock to danger all conflicting signals not already locked. The principle of Interlocking is applicable to the lever and signal of a single switch and may be extended indefinitely to suit any system of tracks. The greater the complication of tracks the greater the value of the interlocking system, because of the greater liability to mistakes of various kinds.

The adoption of Interlocking apparatus has for many years been by law obligatory on new railways in England, and on the older railways has been so generally adopted that by Reports of 1880 it appears that over eighty per cent of all the switches in England were worked by interlocking apparatus. In this country the government has never made any regulations contemplating the use of Interlocking apparatus, and owing to the great difference between the great railroad systems in England and those in this country, the necessity for such apparatus has been recognized to only a limited extent, and but few of our railways have experience in its use. The great advantages of safety and economy arising from freedom from accidents, at points where traffic was heavy, has led the managers to adopt Interlocking systems on some of our principal roads, to some extent, also, on the elevated railroads in New York city, and the traveling public are gradually gaining an appreciation of the usefulness and importance of such an improvements that will probably lead to very extensive use.

The Pennsylvania Steel Company, at their extensive works at Steelton, Penn., have established a department for the manufacture of Interlocking Apparatus which embodies the improvements designed by their engineer of Interlocking, Mr. A. G. Cummings.

One of the points that has been equipped with Interlocking Apparatus by the Pennsylvania Steel Company is shown in the accompanying plan of tracks at the Union Junction of the Philadelphia, Wilmington and Baltimore Railroad, at Wilmington, Del. This junction is one mile west of the passenger station, at the crossing (at grade) of the Wilmington and Northern Railroad, and of the Delaware Western Railroad, where the Delaware Railroad branches from the main line of the Philadelphia, Wilmington and Baltimore Railroad. Through trains pass this junction at lightning express speed. The main line is protected from crossing roads by dead switches on the crossing roads, by which it is made impossible for trains on the crossing roads to get in the way of the main line trains. There are in all fifteen switches handled and controlled, and three other switches not handled (owing to the infrequent use, or being required only for hand drilling), which are also perfectly controlled. Twelve facing point locks and seventeen signals are employed, some of them 2,150 feet from the signal tower. To operate the above, twenty-eight interlocking levers are used, with two spare levers in the frame for future improvements. At this writing, the apparatus at Union Junction has been in use nearly two years with perfect success, and it will probably repay any railroad manager to visit and study its workings.

(*To be continued.*)

quences might be, if in addition to the promis- | if the top of the ingot, while in a fluid state, | *American.*

The Stock Exchanges and Money Market.

New York Stock Exchange.

Closing Prices for the week ending Jan. 23.

	W. 17.	Th. 18.	F. 19.	Sat. 20.	M. 22.	Tu. 23.
Adams Express	.....	.....	.....	135	134¼	.....
Albany and Susq	.....	.....	.....	.....	.....	.....
1st mortgage	.....	.....	.....	.....	.....	.....
2d mortgage	.....	.....	.....	.....	.....	.....
American Express	91½	92	92	92½	92½	91¾
Burl., C. R. & Nor	.....	82¾	82¾	.....	.....	82⅛
1st mortgage 5s	101¼	.....	101¼	101	101	.....
Canada Southern	70	70	70⅞	70¼	70⅜	69¾
1st mortgage guar	95½	95⅝	95¾	95⅞	.....	95⅛
Central of N. Jersey	76	74¼	74¾	74	73⅝	72⅝
1st mort. 1890	.....	.....	118	.....	.....	.....
7s, consol. ass	111	.....	.....	.....	110½	.....
7s, convertible ass	.....	.....	110	.....	110¾	110¾
7s, Income	.....	85	85	85	.....	.....
Adjustment	.....	.....	.....	106½	.....	.....
Central Pacific	85¾	85¼	85¾	84¾	84¾	83¾
6s, gold	113½	114¾	113¾	113½	114	.....
1st M. (San Joaq)	.....	.....	.....	.....	.....	109¼
1st M. (Cal. & Or.)	.....	103	.....	.....	.....	.....
Land grant 6s	.....	.....	.....	.....	.....	.....
Chesapeake & Ohio	23½	23¾	23¾	23¾	23¼	.....
1st pref	34½	34¾	.....	35	34¾	34
2d pref	.....	.....	25¾	26½	26¾	26¼
1st mort., series B	90¾	91½	91	91	91	91½
Chicago and Alton	136¾	136½	.....	137	137¼	.. ..
Preferred	.....	.....	.....	.....	.....	.....
1st mortgage	.....	.....	.....	.....	.....	.....
Sinking Fund	.....	.....	.....	.....	.....	.....
Chi., Bur. & Quincy	125	125¼	124¾	124¾	123¼	122¾
7s, Consol. 1903	.....	127½	.....	.....	127½	.....
Chi., Mil. & St. Paul	107¾	107⅝	107¾	107¼	106⅞	106
Preferred	.....	122	122	121¾	121½	.....
1st mortgage, 8s	.....	.....	.....	.....	.....	.....
2d mort., 7 3-10s	.....	.....	.....	126	.....	.....
7s, gold	.....	.....	.....	128	.....	127
1st M. (La. C. div)	.....	.....	.....	120	.....	.....
1st M. I. & M. div.)	.....	.....	.....	.....	.....	.....
1st.M. (I. & D. ext.)	.....	.....	.....	.....	.....	122¼
1st M. (H.&D. div.)	.....	.....	.....	.....	.....	.....
1st M. (C. & M. div.)	.....	.....	.....	.....	.....	.....
Consolidated S. F.	.....	.....	.....	.....	124¼	.....
Chi. & Northwestern	135¼	134¾	134¾	132⅞	133¼	133
Preferred	149	149½	149¾	147¼	146⅝	140½
1st mortgage	.....	.....	.....	.....	108½	.....
Sinking Fund 6s	.....	.....	.....	.....	.....	.....
Consolidated 7s	.....	133¼	.....	.....	.....	.....
Consol. Gold bo'ds	.....	.....	125½	125¾	.....	125¾
Do. reg	.....	.....	125½	.....	.....	.....
Chi., R. Isl. & Pac.	126¼	126¾	125⅞	125¼	123⅞	123½
6s, 1917, c	125	125	.....	.....	124½	124½
Clev., Col., Cin. & Ind.	80½	81	79	.....	.....	.....
1st mortgage	..	.....	..	..	..	.....
Clev. & Pittsburg gr.	140¼	.....	.....	.....	.....	141
7s, Consolidated	127½	127¼	.....	127	.....	.....
4th mortgage	.....	110½	110¼	.....	.....	.....
Col., Chi., & Ind. Cent	4½	3¼	3⅞	4	4	.....
1st mortgage	.....	.....	.....	.....	.....	.....
2d mortgage	.....	.....	.....	.....	.....	.....
Del. & Hud Canal.	109½	109¼	108¾	108⅝	108¾	108¾
Reg. 7s, 1891	.....	.....	114¾	.....	.....	.....
Reg. 7s, 1884	.....	.....	.....	.....	.....	.....
7s, 1894	.....	.....	.. ..	.....	.....	.....
Del., Lack. & Western	128¾	128¾	128¾	127¾	127¾	127
2d mortgage 7s	.....	.....	.....	.....	.....	.....
Consol. 1907	.....	.....	.....	.....	.....	.....
Erie Railway	.....	.....	.....	.....	.....	.....
1st mortgage	127	.....	.....	.....	.....	.....
2d mort. 5s, ext	.....	.....	.....	.....	.....	.....
3d mortgage	.....	.....	.....	.....	102¾	.....
4th mort. 5s, ext	.....	.....	.....	.....	.....	.....
5th mortgage	.....	110	110	.....	.....	.....
7s, Consol. gold	.....	131	.....	131	.....	129½
Great West. 1st mort	.....	.....	108¾	.....	.....	.....
2d mortgage	.....	100	. ...	.....	.....	100¾
Hannibal & St. Jo	45¾	46	46	45⅝	43	.....
Preferred	82	83	84	83¾	84	83
8s, Convertible	....	.....	.....	.....	.....	.....
Houston & Tex. Cen	....	79	.....	78¼	.....	.....
1st mortgage	108½	108¼	.....	.....	.....	108
2d mortgage	.....	.....	121¾	.....	.....	.....
Illinois Central	146¼	146	145	145	144¼	144¼
Lake Shore & Mich So	114¾	114⅜	113¾	113¾	112⅜	111⅝
Consol. 7s	.....	.....	.....	126	.....	.....
Consol. 7s, reg	.....	.....	.....	.. .	125¾	104¾
2d Consolidated	.....	.....	121¼	.....	.....	.....
Leh. & W. B. con. ass	104½	103⅞	.....	.....	104¼	.....
Long Dock bonds	....	.....	.....	118	.....	.....
Louisville & Nash.	57⅜	57¼	57⅝	57⅛	57¼	56¼
7s, Consol. reg	116¼	.....	.....	.....	.....	.....
Manhattan	49½	49⅜	.....	49⅝	49	49
1st pref	.....	90	.....	.....	89	.....
Met. Elevated	84	.....	.....	.....	.....	.....
1st mortgage	98¾	98¾	98⅞	98⅞	98¾	98¾
Michigan Central	99½	99¼	99⅝	99	98¾	98
7s, 1902	.....	125	125	.....	.....	.....
Morris & Essex	.....	.....	.....	.....	.....	.....
1st mortgage	.....	.....	.....	.....	.....	.....
2d mortgage	115¾	.....	.....	.....	.....	.....
7s of 1871	122	.....	123	.....	.....	123
7s, Convertible	...	.....	.....	.....	.....	.....
7s, Consolidated	.....	122	.....	.....	.....	.....
N. Y. Cen. & Hud. R.	128⅝	128	127⅝	127	126⅞	126⅞
6s, S. F. 1883	101¼	.....	.....	.....	.....	.....
6s, S. F., 1887	107¾	.....	107¾	.....	.....	.....
1st mortgage	130¾	.....	.....	.....	.....	130¼
1st mortgage, reg	...	.....	.....	.....	.....	.....
N. Y. Elevated	.....	.....	.....	.....	.....	.....
1st mortgage	115	115	.....	115	.....	.....
N. Y. & Harlem	.....	.....	.....	.....	.....	.....
Preferred	.....	.....	.....	.....	.....	.....
1st mortgage	.....	.....	.....	131	.....	.....
1st mortgage, reg	...	.....	.....	.....	.....	.....
N. Y. Lake Erie & W	40¾	40¼	40¾	39¾	39¾	39¾
Preferred	82½	.....	82¾	81¾	.....	.....
2d Consolidated	97¼	97¼	97	97	99¾	96⅝
New 2d 5s fund	96	.....	.....	.....	.....	.....
N. Y., N. Hav'n & Hart	.....	.....	.....	.....	170	170
North Mo. 1st mort	119¼	.....	.....	.....	119½	.....
Northern Pacific	50¾	50¼	50¾	50⅝	50⅞	49¼
Preferred	87¼	86¾	86¾	86⅞	86¼	84¾
Ohio & Mississippi	33¾	33⅞	.....	.....	33	.....
Preferred	.....	.....	.....	.....	.....	.....
2d mortgage	.....	.....	.....	.....	.....	.....
Consolidated 7s	.....	.....	.....	.....	.....	.....
Consol. S. Fund	.....	.....	.....	.....	.....	.....
Pacific Mail S. S. Co	42⅞	43¼	42⅜	42	41¼	40¼
Pacific R. R. of Mo	.....	.....	.....	.....	.....	.....
1st mortgage	.....	.....	.....	.....	.....	.....
2d mortgage	.....	.....	112	112	.....	.....
Panama	.....	.....	.....	.....	.....	.....
Phila. & Reading	58	57¼	57¼	56⅛	56	55⅛
Pitts, Ft. W. & Chi. gtd	.....	.....	.....	137	136⅛	135⅛
1st mortgage	.....	.....	.....	136	.....	.....
2d mortgage	.....	.....	.....	.....	.....	132
3d mortgage	.....	.....	.....	.....	.....	.....
Pullman Palace Car	...	125¼	125¼	126	126	126
Quicksil'r Min'g Co	.....	.....	.....	.....	.....	.....
Preferred	.....	39	.....	.....	.....	.....
St. Louis & San Fran	.....	.....	33⅓	.....	.....	.....
Preferred	54¼	54⅜	.....	.....	.....	53
1st Preferred	99⅞	100	....	....	96¼	96¾
St. L., Alt'n & T. H.	52	54	55	54	54⅜	55
Preferred	93¼	93⅛	95	94¾	94	93⅛
1st mortgage	....	.....	114	.....	.....	.....
2d mort. pref	.....	.....	.....	.....	.....	.....
Income bonds	.....	.....	.....	.....	.....	103
St. L., Iron Mt. & S.	.....	.....	.....	.....	.....	.....
1st mortgage	.....	.....	.....	.....	.....	.....
2d mortgage	.....	.....	.....	.....	.....	108
Toledo and Wabash	....	.....	.....	.....	.....	.....
1st mortgage	.....	.....	....	.....	.....	.....
2d mortgage	101½	.....	100	.....	100	.....
7s, Consolidated	.....	.....	.....	97½	.....	.....
St. Louis Division	.....	.....	....	.....	104½	.....
Union Pacific	104⅝	103⅜	103	102⅜	102¼	101⅞
1st mortgage	.....	114	....	114	114	114
Land Grant 7s	.. ..	.....	.....	.....	.....	.....
Sinking Fund 8s	.....	.....	119½	119¼	119¼	.....
United States Ex	.....	.....	.....	.....	.....	.....
Wabash, St. L. & Pac	36	35⅜	35⅜	35½	35⅝	33
Preferred	56½	56¾	56⅜	56½	56½	54⅜
New mort. 7s	.....	95	.....	.....	.....	.....
Wells-Fargo Ex	.....	125	125⅛	.....	.....	.....
Western Pacific b'ds	.....	.....	.....	.....	.....	111¾
Western Union Tel.	84½	84½	84½	83½	83⅛	82⅜
7s, S.F conv., 1900	.....	117	.....	.....	.....	.....
FEDERAL STOCKS :—						
U. S. 4s, 1907, reg	119⅛	119¼	119¼	119¼	.....	119⅜
U. S. 4s, 1907, coup	119¼	119¼	.....	119⅜	.....	119⅜
U. S. 4½s, 1891, reg	.....	.....	113⅛	113¼	113¾	.....
U. S. 4½s, 1891, coup	.....	.....	.....	113¼	113¼	.....
U. S. 5s, cont'd at 3⅛	.....	.....	.....	.. ..	.. ..	.....
U. S. 3s, reg	103⅜	.....	103⅜	.....	104	104⅜
Dt. of Col. 3-65s, reg	.....	.....	.....	.....	.....	.....
Dt. of Col. 3-65s, coup	.....	.....	.....	.....	.....	.....

Boston Stock Exchange.

Closing Prices for the Week Ending Jan. 23.

	W. 17.	Th. 18.	F. 19.	Sat. 20.	M. 22.	Tu. 23
Atch., Top. & San. Fe.	85¼	84⅞	84⅝	84⅝	84	84⅜
1st mortgage	121	.....	... .	.....	.....	121¼
Land Grant 7s	.....	.....	113½	.....	.....	113
Boston & Albany	.....	174½	174¼	174	173¾	173¾
Boston and Lowell	102	.....	.....	.....	.....	.....
Boston & Maine	150¼	151	151¼	151¼	152	.....
Boston & Providence	161¼	.....	.....	.....	.....	.....
Bos'n, Hart. & Erie 7s	.....	.....	... .	.....	.....	.....
Burl. & Mo. R. L. G. 7s	.....	.....	115½	.....	.....	.....
Burl. & Mo. R. in Neb	.....	....	.....	.....	.....	.....
6s, exempt	.....	.....	.....	.....	.....	.....
4s	.....	... .	.....	.....	.....	82
Chi., Burl. & Quincy	125	125¾	125¼	125	123⅜	.....
Cin., Sand. & Clev ($50)	.....	....	.....	.....	.....	.....
Concord ($50)	102	.....	100½	.....	.....	.....
Connecticut River	.....	.....	.....	.....	.....	163
Eastern	41	40½	41	41¼	41	41
New 6s, Bond	109¾	109⅝	110	110¼	110	110
Fitchburg	121	121	121½	121¾	.....	.....
N. Y. & New England	51⅛	51	51	50¼	50¼	48¾
7s	116	.....	.....	.....	.....	115⅞
Northern N. H	.....	110	... .	.....	.....	.....
Norwich & Worcester	.....	.....	.....	.....	.....	.....
Ogden & Lake Cham	.....	.....	.....	.....	.....	.....
Old Colony	135	135	135	136	.....	.....
Ph., Wil. & Balt. ($50)	.....	.....	.....	.....	.....	.....
Portl'd, Saco & Ports	.....	.....	.....	112	112	112
Pueblo & Ark Val 7s	.....	114	114	.....	.....	.....
Pullman Palace Car	.....	.....	.....	125½	126	.....
Union Pacific	104¼	103¾	103¾	102¼	102	102
6s	113⅜	.....	.....	.....	113¾	.....
Land Grant 7s	.....	.....	.....	.....	.....	113¼
Sinking Fund 8s	.....	.....	.....	116¾	.....	.....
Vermont & Mass	.....	.....	.....	.....	.....	.....
Worcester & Nashua	.....	.....	.....	.....	... .	.....
Cambridge (Horse)	.....	.....	.....	.....	.....	.....
Metropolitan (Horse)	72	.....	73	.....	.....	73
Middlesex (Horse)	.....	.....	.....	.....	.....	.....
Cal. & Hecla Min'g Co	245¼	245½	246½	.....	.....	.....
Quincy	59¼	61	61½	61½	62	.....

Philadelphia Stock Exchange.

Closing Prices for the Week Ending Jan. 23.

	W. 17.	Th. 18.	F. 19.	Sat. 20.	M. 22.	Tu. 23
Allegh'y Val. 7 3-10s	.....	.....	.....	.....	.....	.....
7s, Income	.....	49⅛	.....	49½	49⅝	49⅝
Buff., Pitts & West.	19	19¾	19	19¼	19	18⅝
Camd'n & Am. 6s, '83	.....	.....	.....	.....	.....	.....
6s, 1889	.....	.....	.....	.....	.....	.....
Mort. 6s, 1889	112	.....	112¾	.....	.....	.....
Camden & Atlantic	.....	.....	.....	.....	.....	.....
Preferred	.....	.....	.....	.....	.....	.....
1st mortgage	.....	.....	.....	.....	.....	.....
2d mortgage	.....	.....	.....	.....	.....	.....
Catawissa	.....	.....	.....	.....	.....	.....
Preferred	.....	.....	.....	.....	.....	.....
2d pref	.....	.....	.....	.....	.....	.....
7s, new	.....	.....	.....	.....	.....	.....
Del. & Bound Brook	.....	.....	.....	.....	.....	.....
7s	.....	.....	.....	.....	127	127
Elmira & Williamsp't	.....	.....	.....	.....	.....	.....
Preferred	.....	.....	.....	.....	.....	.....
Hunt. & B. Top Mt.	.....	15⅛	.....	.....	.....	.....
Preferred	30	... .	.....	.....	.....	.....
2d mortgage	.....	.....	.....	.....	.....	.....
Lehigh Navigation	40⅝	40⅜	40¼	40⅜	40⅜	39⅝
6s, 1884	.....	.....	.....	102¼	102¾	.....
Gold Loan	.....	.....	.....	110¾	.....	.....
Railroad Loan	.....	.....	.....	.....	.....	.....
Conv. Gold Loan	.....	.....	109	.....	.....	.....
Consol. Mort, 7s	116	.....	.....	116¾	.....	116
Lehigh Valley	64¾	64¾	64½	64¾	65	64⅞
1st mort. 6s, coup	....	120½	.....	.....	.....	120
1st mort. 6s, reg	.....	.....	.....	.....	.....	.....
2d mort. 7s	.....	.....	.....	.....	.....	.....
Consol mort. 6s	120	.....	.....	.....	.....	.....
Consol. mtg. 6s, reg	.....	120	.....	.....	.....	.....
Little Schuylkill	.....	.....	.....	.....	57½	.....
Minehill & Sch. Hav'n	.....	.....	.....	61⅝	.....	62
North Pennsylvania	.....	.....	.....	.....	.....	.....
1st mortgage 6s	103⅛	.....	.....	.....	.....	.....
2d mortgage 7s	.....	.....	.....	.....	.....	.....
Genl. mtg. 7s, coup	.....	.....	.....	125	.....	.....
Genl. mtg. 7s, reg	.....	.....	.....	.....	.....	.....
Northern Central	.....	55	55	55⅜	55¼	55
5s	.....	.....	.....	.....	.....	.....
Northern Pacific	50⅜	50½	50⅜	50⅜	50⅜	49½
Preferred	87⅛	86½	86⅞	86⅜	86¼	84⅜
Pennsylvania R. R.	60⅞	61⅛	61	61	60⅜	60⅞
1st mortgage	.....	.....	.....	.....	.....	.....
Gen'l mort	.....	.....	.....	.....	.....	.....
Gen'l mort reg	.....	.....	.....	.....	.....	125
Consol. mort. 6s	.....	.....	.....	.....	.....	116¾
Consol. mort. reg	.....	.....	.....	.....	.....	.....
Pa. State 5s, new	.....	.....	.....	117	.....	.....
do 4s, new	.....	.....	.....	.....	.....	.....
do 3½s, 1912	.....	.....	.....	.....	.....	.....
Phila. & Reading	29⅛	28⅝	28¾	28⅛	28	27¾
1st mortgage 6s	.....	.....	.....	.....	.....	.....
7s of 1893	.....	.....	.....	.....	.....	.....
7s, new convert	77	.....	.....	.....	.....	.....
Consol. mort. 7s	.....	125	125	125	.....	.....
Consol. mort. reg	.....	.....	.....	.....	.....	.....
Gen'l mort. 6s	93¾	94	94¼	94¾	94¾	94¾
Def. Income bonds	.....	25	.....	.....	.....	.....
Philadelphia & Erie	20	21	.....	21½	21	.....
1st mortgage 5s	.....	.....	103¾	103¾	103¾	103¾
2d mortgage 7s	112½	.....	.....	.....	.....	.....
Pittsb., Cin. & St. L. 7s	.....	.....	.....	121¼	.....	.....
Pitts., Tit. & Buff. 7s	95½	.....	.....	96	96	96
Schuylkill Navi't'n	.....	.. ..	.....	.....	.....	.....
Preferred	13¾	.....	.....	.....	.....	.....
6s, 1897	.....	.....	.....	.....	67¾	.....
6s, 1907	.....	.....	90	.....	.....	.....
United Co. of N. J	188¾	.....	.....	188¾	188¾	188¾
Hestonville, (Horse)	.....	.....	.....	.....	.....	.....
Chestnut & Walnut)	.....	.....	.....	.....	.....	.....

switches first, locking the same next, and last

(*To be continued.*)

Baltimore Stock Exchange.

Closing Prices for the Week Ending Jan. 22.

	Tu.16.	W.17.	Th.18.	F.19.	Sat.20.	M.22.
Baltimore & Ohio...	.....	.....	.....	.....	.....	.....
6s, 1885.....	104¼	.....	.....	.....	.....	.....
Central Ohio ($50)...	.....	.....	.....	.....	.....	.....
1st mortgage.....	.....	.....	.....	110	.....	.....
Marietta & Cincin'ti.	.....	.....	.....	.....	.....	.....
1st mortgage, 7s..	.....	130	131	131½	.....	131½
2d mortgage, 7s...	99¾	100¾	100¾	100¾	101	101
3d mortgage, 8s...	54½	54¾	55	.....	53⅝	55⅜
Northern Cen. ($50).	.....	.....	.....	53	55¾	.....
2d mort. 6s, 1885..	103	.....	.....	.....	.....	.....
3d mort. 6s, 1900..	.....	.....	.....	.....	.....	.....
6s, 1900, gold.....	.....	.....	.....	.....	.....	.....
6s, 1904, gold.....	.....	.....	.....	.....	.....	.....
Pitts. & Connelsv. 7s.	113½	119⅜	119¾	119¾	119¾	119½
Virginia 6s Consol..	55	54¾	.....	.....	.....	.....
Consol. coupons...	.....	.....	.....	.....	.....	53½
10-40 bonds.....	39¾	.....	.....	.....	.....	39½
Def'd Certificates.	.....	.....	.....	.....	.....	.....
New 3s.....	.....	.....	.....	48½	.....	47¼
Western Maryland..	.....	.....	.....	.....	.....	.....
1st M.,end.by Balt	.....	.....	.....	.....	.....	.....
2d M., do.	.....	.....	.....	.....	.....	.....
3d M., do.	.....	.....	.....	.....	.....	.....
1st M., unendorsed	109¼	.....	111	....	109¼	....
2d M.,end.Wash Co	.....	.....	.....	.....	.....	.....
2d M., preferred...	.....	.....	.....	.....	110	.....
City Passenger R. R.	.....	.....	.....	.....	.....	.....

London Stock Exchange.

	Closing Prices			
	Dec. 29.		Jan. 5.	
Baltimore and Ohio 5s, 1927.....	107	109	107	109
Central of N. J., $100 shares.....	70	75	70	75
Do. consol. mort.....	110	112	110	112
Do. Income Bonds.....	88	92	88	92
Central Pacific of Cal., $100 shs..	89	90	90	91
Do. 1st mort. 6s, 1895-'98.....	115	117	115	117
Det., G'd Haven & Mil. Equip bds.	118	120	118	120
Do. Con. M. 5p.c., till '83 after 6p.c.	117	119	117	119
Illinois Central $100 shares.....	147	148	148	149
Do. S. F. 5s, 1903.....	105	107	105	107
Lehigh Valley Cons. mort. 1923...	115	120	115	120
Louisville and Nashville mort. 6s	91	93	93	95
Do. capital stock $100 shares...	54	55	55½	56¼
N. Y. Cen. & Hud. R. mort. bonds.	130	135	130	135
Do. $100 shares.....	132	133	131½	132½
Do. mort. bonds (stg.).....	122	124	119	121
N. Y. Lake Erie & West. $100 shs.	40¼	40¾	41	41⅛
Do. 6 p. c, pref. $100 shares....	84	86	85	87
Do. 1st Con. Mort. bonds (Erie).	128	132	128	132
Do. do. Funded Coupon bonds.	125	130	125	130
Do. 2d Consol. Mort. bonds....	99	101	99	101
Do. do. Funded Coupon bonds.	97	99	97	99
N. Y., Pa. & Ohio 1st mort. bonds.	50½	51½	49	50
Do. Prior Lien bonds (sterling).	100	105	103	106
Pennsylvania $50 shares.....	61⅛	62	61¾	62⅛
General Mortgage.....	124	126	121	123
Phil. & Erie Gen. mort. 6s, 1920...	117	119	114	116
Philadelphia & Reading $50 shs..	27	27½	28	28⅛
General Consol Mortgage.	115	117	115	117
Do. Improvement Mortgage....	104	106	104	106
Do. Gen. Mtg.'74, ex-def'd coup.	97	99	94	96
St. L. Bridge 1st mort. gold bond.	122	124	122	124
Do. 1st. pref. stock.....	92	96	92	96
S. P'fic of Cal., 1st mort 6s, 1905-6.	106⅛	107⅛	106⅛	107⅛
Union Pacific 1st mtg. 6s, 1896-9..	115	117	116	118
Wabash, St. L. & P. $100 shares..	36	37	35¾	36⅛
Do. $100 pref shares.....	56	57	56	57
Do. gen. mort. bonds.....	81	83	81	83

AMERICAN RAILROAD JOURNAL

Financial and Commercial Review.

WEDNESDAY, JANUARY 24, 1883.

RATES for money on call on stock collaterals during the forenoon, and down to 2 o'clock were 4 per cent. During the last hour of business on the Stock Exchange the rates were 3½@4 per cent.

The posted rates for foreign exchange were: Sixty-day 4.82¼@4.83; demand, 4.86½@4.87; the actual rates were as follows, viz: Sixty-day bills, 4.82@4.82½; demand, 4.85¾@4.86; cables, 4.86½@4¾; commercial bills were 4.80½@¾. Continental bills were as follows: Francs, 5.22½@5.21⅞ and 5.18¾@5.18⅛; reichsmarks, 94¾@⅞ and 95⅜@½. Guilders, 39 13-16@⅞ and 40@⅛.

The Governor of Pennsylvania, in his last annual message to the Legislature says of the State finances that, four years ago the State debt was $21,875,620.86; at this date it is $20,225,000.28, the reduction of the debt in four years being $1,650,537.56. From this total of the State debt is to be deducted assets in the Sinking Fund amounting to $7,992,983.82. The net State indebtedness December 1, 1882, is $12,232,000.46. There is at present under the administration of State Treasurer S. M. Bailey, in the Sinking Fund, $2,007,073.90 cash. As none of the State loans are at present reimbursable, the Treasurer has no lawful authority to apply this fund to the reduction of the debt, except by going into the market and buying the bonds of the State at a premium, handsome, indeed, and creditable to the State, but embarrassing to financial officers charged with accountability.

The report of the Philadelphia, Wilmington and Baltimore Railroad Company shows that that the earnings of the road and its connections during the year ending October 31, 1882, amounted to $5,428,091.91, and the total expenses to $3,676,494.30, leaving $1,751,597.61 as the net earnings. These earnings result from the operations of the main line, including the New Castle Branch, the Philadelphia and Baltimore Central, and including what was the West Chester and Philadelphia Railroad, the Delaware Railroad, Queen Anne's and Kent Railroad, and Delaware and Chesapeake Railroad. The first three roads named earned $1,781,286.41, and the expenditures upon the last two named exceeded their aggregate receipts by $29,788.80. The report also states that after closing the revenue fund allowing for probable depreciation of the companies' assets, and for extraordinary expenditures not properly chargeable to operating expenses, the final result is a surplus to credit of profit and loss account, October 31st, 1882, of $1,465,585.49.

The revenues of the city of Philadelphia from all sources during the year 1882 were $13,425,404.97, and the total expenditures, $13,255,688.53, leaving a balance in the treasury at the end of the year of $169,720.44. This, added to the cash balance, $2,250,693.44, of January 1, 1882, and the sinking fund cash, $705,271.39, of 1st of January, 1883, makes a general cash balance at the latter date of $3,125,685.27. Deducted from this are $2,753,260.05 on account of outstanding indebtedness not presented for payment, still leaving a surplus cash balance for 1882 of $372,425.22. In addition to this is the unexpended balance of the surplus of the two previous years, $28,559.75. The funded debt of the city Jan. 1, 1883, was $67,468,316.24, and the floating debt $459,576.17. The total floating and funded debt has been reduced during the year from $68,629,403.72 to $67,922,892.41, a decrease of $706,511.31. The decrease during 1881 and 1882 has been $2,109,538.06, and the total of the sinking fund and other assets in the treasury, $28,705,016.80. The unexpended balances of loans placed to the credit of the Sinking Fund Commissioners, subject to drafts or payments on account of loans by the departments, was $98,597.84, and the amount of loan warrants countersigned, $65,222.05.

The report of the business of the Delaware Railroad for the past year shows that 40,976 tons of peaches and 7,959 tons of berries were carried, making a gain in freight receipts of $139,833. There were also gains of $12,000 in passenger, and 14,497 in mail and miscellaneous receipts. The surplus of earnings over expenditures was $48,319.80.

The value of the exports of breadstuffs from the United States in December, 1882, was $17,086,041, and in December, 1881, $13,806,400. In 12 months ended December 31, 1882, $182,682,734, and in the previous 12 months $224,124,832.

The value of the exports of domestic provisions tallow and dairy products from the United States in December, 1882, was $12,071,422, and in December, 1881, $12,987,325. In 12 months ended December 31st, 1882, $96,934,423, and in the previous 12 months $133,332,417. The value of the exports of dairy products in 8 months ended 31st December, 1882, was $10,439,701, and in previous 12 months $15,513,800.

During the year, 63,578 East-bound and 64,030 West-bound freight cars were hauled through the Hoosac Tunnel, making a total of 127,608. Of these 61,995 of the East-bound and 36,653 of the West-bound cars were loaded. A total of 12,900 trains has passed through the Tunnel during the year, of which 4,000 were passenger and 5,107 freight, making an average of 41 trains a day. A total of 117,496 East-bound and of 110,654 West-bound passengers were carried over the road during the year, and 1,043,650 tons of freight were moved.

Mr. Eugene Kelly, chairman of the committee of Tennessee bondholders in New York which recently addressed a protest to Gov. Hawkins against the overthrow of the compromise of last May, has sent a dispatch to Gov. Bate renewing the protest, in which he says: "We protest against the assumption that the compromise of last May, pursuant to which about one-half the State debt had been funded for three-fifths of its amount and at a reduced rate of interest for a period of six years, can be overthrown and the creditors of Tennessee forced, by act of its Legislature, to accept one-half of their dues and one-fourth of their interest. The compromise of last May was the second agreed upon, besides several fundings of interest and bonds in default in former years. The bill of settlement now before the Legislature is no compromise, but an attempt to coerce the State's creditors, and, as such, is repugnant to every sentiment of justice, morality and fair dealing. It will not effect a settlement."

The New York Central and Hudson River Railroad Co. has $7,490,000 bonds maturing May 1 next, of which over $6,000,000 are represented by debt certificates. It is now proposed to issue a 4½ per cent debenture bond to pay off the above obligations.

Illinois has a surplus in her treasury of $3,000,000—the product of the receipts from the percentage of earnings paid to the State by the Illinois Central and other railroads. The debt of the State is only $26,300.

The State of Missouri has an assessed valuation of real and personal estate footing up a total of $649,269,242, and an outstanding debt of $10,948,000.

At Mobile, Ala., on the 17th inst., Judge Bruce of the United States Circuit Court, rendered a decree appointing John Swann receiver

to wind up unfinished matters of the Alabama and Chattanooga Railroad and to protect the purchasers of the said road in the enjoyment of the property sold under order of the court.

The total coinage of the United States Mints, during the year 1882, comprised 88,805,831 pieces, valued at $94,820,120. The total gold coinage amounted in value to $65,887,685; the total silver coinage to $27,972,635, including 27,574,100 standard dollars; the total minor coinage—one, three and five cent pieces—to $960,400.

The Pennsylvania and New York Canal and Railroad Company, which is the northern outlet of the Lehigh Valley Railroad, reports the gross receipts of the past year at $2,303,-544.07, the expenses $1,258,382.71, and net earnings $1,045,161.36. Its coal tonnage was 1,447,972 tons. It has a fleet of six vessels plying on the lakes between Buffalo and Chicago.

The annual report of the Union Passenger Railway Company of Philadelphia, shows $1,-302,133 receipts and $896,727 expenditures, leaving $405,406 net earnings. Of this $169,362 was paid for interest and rentals, and $225,000 for dividends, leaving $11,043 surplus to be carried forward. The Union road is the most extensive of the Philadelphia City passenger lines, and carried last year the large number of 21,864,841 passengers.

The message of the Governor of Wisconsin, dwells upon the excellent condition of the finances, and shows the balance of the war debts due to the United States to be only $50,-000. As an offset the State claims $90,000 from the National Government for equipment and payment of troops during the war. Public lands, during the year, sold at from 50 cents to $3 per acre, and about 1,000 acres are still on hand.

The following quotations of sales of railway and other securities, for the week, are in addition to those given elsewhere in our columns.

New York.—Atchison, Colorado and Pacific 1st, 94: Buffalo, New York and Erie 1st, 1916, 130; Boston and New York Air Line pref., 80½; Belleville and Southern Illinois 1st, 122½; Chicago and Eastern Illinois, 1st, 100; Chicago, St. Paul Minn. and Omaha 52½; do. pref., 110½; do. consol., 108½; Cedar Falls and Minn. 14; Central Iowa, 25; Chesapeake and Ohio 6s, 1911, 100; do. cur. 6s, 54; do. 1st, Series A. 108½; do. Pur. money Fund., 113½; Columbus, Chicago and Indiana Central reorganization certif., 62½; do. Trust Co. certif. ass. sup., 116; do. inc., 49; Central Iowa 1st, 108½; Chicago, Burlington and Quincy, Denver div. 4s, 85½; Chicago, Milwaukee and St. Paul, La C. and Dav. div. 1st, 94½; do. Min. Pt. div. 1st, 91½; do. S. W. div. 1st, 108; do. S. Min. div. 1st, 106½; do Chicago and Pacific W. div. 1st, 92; Chicago and Northwestern S. F. 5s, 100½; do. Int. bonds, 103; Danbury and Norwalk, 70½; Denver and Rio Grande, 46⅞; do. 1st, 108½; do. consol., 91¾; Denver, South Park and Pacific 1st, 99; East Tenn., Virginia and Georgia, 9¾; do. pref., 17½; do. 5s, 71½; Evansville and Terre Haute. 1st, 97; Elizabethtown, Lexington and Big Sandy 6s, 95: Fort Worth and Denver, 33: do. 1st, 72; Green Bay, Winona and St. Paul, 6½; Illinois Central Leased Line, 81; Indiana, Bloomington and Western, 33; do. inc., 45; Indianapolis, Decatur and Springfield 1st, 101½; International and Gt. Northern coupon 6s, 85; Kansas Pacific 1st consol., 100¼; Louisville and Nashville genl. mort. 6s, 92¾; Long Island, 63; do. consol. 5s, 97½; do. 1st, 115; Lake Erie and Western, 31; do. 1st, 101; Louisville, New Albany and Chicago, 66; do. 1st, 102½; Metropolitan Elevated 2d, 88; Manhattan Beach, 18½; Michigan Southern S. F., 106½; Missouri, Kansas and Texas, 32⅝; do. gen. mort. 6s, 83⅞; do. 7s, consol. 109; do. 2d, 58½; Missouri Pacific, 103¾; do. 1st consol. 102; do. 3d, 109½; Memphis and Charleston, 47; Minneapolis and St. Louis, 29½; do. pref., 67: do. South western exten. 1st, 110¼; do. Pacific ext. 1st, 101¼; Mobile and Ohio, 19¾; do. 1st deben., 86; Milwaukee, Lake Shore and Western pref., 48½; do. 1st, 93; New York, Chicago and St. Louis, 14⅝; do. pref., 32¾; do. 1st, 97½; Nashville, Chattanooga and St. Louis, 63; New York Ontario and Western, 26¼; Norfolk and Western pref., 48½; do. genl. mort., 101¾; Northern Pacific, 1st, 103; New Orleans Pacific 1st, 89¾; Ohio Central, 13½; do. 1st, 93; Ohio Southern, 13½; do. 1st, 82½; Oregon Railway and Nav., 138; do. 1st, 106¼; Oregon Trans Continental, 86½; Oregon Short Line 6s, 100; Peoria, Decatur and Evansville, 27; Rochester and Pittsburgh, 20½; do. 1st, 106; Richmond and Alleghany, 14; do. 1st, 79; Richmond and Danville, 56¾; do. 6s, 94½; do. deben., 104¾; Richmond, Danville and West Point, 26½; Rome, Watertown and Ogdensburgh, ext. 5s, 74½; do. inc., 42½; Southern Pacific of Cal. 1st, 103½; St. Louis, Alton and Terre Haute dividend bonds 6o; St. Paul and Duluth, 39¾; do. pref., 95½; St. Paul, Minn. and Man., 144; do. 2d, 108¾; do. Dakota ext. 1st, 108: South Carolina, 25¼; St. Louis and Iron Mt. 5s, 78; do. Arkansas Branch 1st, 108; do. Cairo and Fulton 1st, 110; do. Cairo, Ark. and Texas 1st, 107¾; St. Louis, Kansas and Northern, R. E. 7s, 108⅝; do. Omaha div. 1st, 108¾; St. Louis and San Francisco 2d, Class C, 93⅞; St. Paul and Sioux City 1st, 112½; Texas and Pacific, 40¾; do. inc. L. G., 60¼; do. consol., 95; Rio Grande div. 1st, 86¾; Toledo, Delphos and Burlington, 10; Union Pacific Col. Trust 1st, 103½; Wabash, St. Louis and Pacific gen'l. mort. 6s, 80; do. Havana div. 1st, 87; do. Chicago div. 1st, 82; do. Toledo, Peoria and Western 1st, 107; Arkansas 7s, L. R., P. B. & N. O., 38; do. L. R. & Ft. S., 44; do. Central, R. R., 19; do. M., O., & R. R. 37; Alabama, Class A, 83; Louisiana consol., 73¼; South Carolina 6s, non-fund., 7; Tennessee 6s, old, 43; do. new, 42; do. compromise, 45½; American Cable, 67; Am. Dist. Tel., 30; Mutual Union Tel., 22; do. 6s, 75; Consolidation Coal, 27½; Colorado Coal and Iron, 29½; do. 6s, 84; Maryland Coal, 17; Homestake Mining, 19.

Boston.—Atlantic and Pacific blocks, 102; do. inc., 20; do. 6s, 93⅞; Atchison, Topeka and Santa Fe 1st, guar., 112½; do. 6s, 101⅞; Atchison R. R. 4½s, 82; Brookline 7s, 13o; Boston, Clinton, Fitchburg and N. Bedford, 58; Burlington and Missouri in Neb. 6s, non-exempt, 103¼; Chicago, Burlington and Quincy 7s, 126½; do. 4s, 86¼; do. Denver ext. 4s, 83; Connotton Valley 6s, 34; California Southern 1st, 65; Central Iowa, 25½; Cambridge City 6s, 115; Columbus, Springfield and Cincinnati, 1c; Connecticut and Passumpsic Rivers R. R. pref.,91; Chicago and West Michigan, 6s: Detroit, Lansing and Northern 7s, 119; Flint and Pere Marquette, 27: do. pref., 99¾; Highland Street R. R., 134; Iowa Falls and Sioux City, 88¾; Kansas City, St. Joseph and Council Bluffs 7s, 113¼, Kansas City, Springfield and Memphis blocks, 101; Kansas City, Lawrence and Southern 5s, 105¼; Kansas City, Fort Scott and Gulf 7s, 111; Little Rock and Ft. Smith, 36; do. 7s, 105; Louisiana and Missouri River, 12; do pref. 30; Leavenworth, Topeka and Southwestern 4s, 72: Mexican Central, 20; do. inc., 21; do. 7s, 73; do. Blocks No. 3, 97¾; Marquette, Houghton and Ontonagon, 67¾; Massachusetts Central, 3½; do. 6s, 25½; New Hampshire State 6s, 125; New Mexico and Southern Pacific 7s, 113¾; New York and New England 6s, 105⅝: Oregon Short Line 6s, 97½; Portsmouth, Gt. Falls and Conway 4½s, 85; Rutland pref., 21; do. 6s,96¾; Southern Kansas and Western 7s, 109½; Sonora 7s, 105¾; Summit Branch, 8: Toledo, Delphos and Burlington, Branch inc., 11; do. S. E. div. 6s, 51; Toledo, Cincinnati and St. Louis, 5; do. 6s, 47; Wisconsin Central, 15¼: Atlantic Mining, 16; Brunswick Antimony, 15; Copper Falls Mining, 2; Franklin, 13¾; Huron, 2; Napa Consol. Quicksilver, 3½; Osceola, 31; Pewabic, 8; Silver Islet, 7; Sullivan, 1.

Philadelphia.—Alleghany Valley, 4; Am. S. S. Co. 6s, 106; Chesapeake and Delaware Canal 6s, 85½: City of Cincinnati 7-30s, 130¼: Central Transp., 34; Erie and Western Transp., 47½: Huntington and Broad Top Mt. consol. mort. 5s, 89: Norfolk and Western pref., 48¼; Philadelphia, Germantown and Norristown, 106; Perkiamen 6s, 103; Philadelphia City 6s, 1892, 122; do. 6s, 1901, 133; do. 4s, 1903. 113½: Philadelphia and Reading gen'l mort. 7s, 101; do. scrip, 105: Philadelphia, Wilmington and Baltimore 4s, 92¾; Pennsylvania Canal 6s, 86½; Pennsylvania R. R. consol. mort. 6s, 116½; do. scrip, 120; Pennsylvania Co. 4½s, 94¾; Sunbury and Lewistown 7s, 110; St. Paul and Duluth, 39¾; Texas and Pacific 1st, 106; do. consol. mort. 6s, 95; Union and Titusville 7s, 93; West Jersey and Atlantic 6s, 109¾. The latest quotations are: City 6s, 108@120; do. free of tax, 127@134; do. 4s, new, 108@114; Pennsylvania State 5s, new loan, 116@118; do. 4s, old, 110@112; do. 4s, new, 113@115; Philadelphia and Reading Railroad, 27⅝@27¾; do. consol. mort. 7s, reg., 125@126; do. gen'l mort. 6s, coupon, 94¼@94¾; do. 7s, 1893, 120@121; do. 7s, new conv., 75@78; United New Jersey R. R. and Canal, 188@189; Buffalo, Pittsburg and Western, 18½@18¾; Pittsburgh, Titusville and Buffalo 7s, 96@96½; Camden and Amboy mort. 6s, 1889, 112@113; Pennsylvania R. R., 60¼@60½; do. general mort. 6s, coupon, 124@125; do. reg., 124@125; do. consol. mort. 6s, reg., 117@119; Little Schuylkill R. R., 57@58; Schuylkill Navigation pref., 13@14; do. 6s, 1882, 89@91; Elmira and Williamsport pref., 58@60: do. 5s, 99@100; Lehigh Coal and Navigation, 39¼@39¾; do. 6s, 1884, 103@104; do. R. R. loan, 115½@116½; do. G. Loan, 110@110½; do. consol. 7s, reg., 116@116½; Northern Pacific, 49¾@49¾; do. pref., 84¾@85; North Pennsylvania, 65@66½; do. 6s, 103@104; do. 7s, 119@—; do. 7s, General mort. reg., 124@—; Philadelphia and Erie, 21@22; do. 7s, 110@112½; do. 5s, 103½@104; Minehill, 61¾@62½; Catawissa, 23@24; do pref., 56@—; do. new pref., 55@—; do. 7s, 1900, 121@125; Lehigh Valley, 64¾@63⅞; do. 6s, coupon, 12c@120½; do. reg., 120@120½; do. 7s, reg., 133@134; do. consol. mort. reg., 12c@121; Fifth and Sixth streets (horse), 190@200; Second and Third, 115@117; Thirteenth and Fifteenth, 74@76; Spruce and Pine, 42½@44; Green and Coates, 80@88; Chestnut and Walnut, 8c@92; Germantown, 60@71; Union, 110@—; West Philadelphia, 135@—; People's, 6@8¼; Continental, 100@103.

Baltimore.—Atlanta and Charlotte, 62½; do. 1st, 104½; Baltimore City 6s, 1886, 105¾; do. 5s, 1894, 114: do. 5s, 1916, 122½; Canton 6s, 109; Charlotte, Columbia and Augusta, 31; Columbia and Greenville 1st, 10c; do. 2d, 73; Central Ohio pref., 53⅜: George's Creek Coal, 91; Louisville Water bonds, 11c; Maryland Defense 6s, 101¾; Norfolk Water 8s, 132: Province of Quebec 5s, 100; Richmond and Alleghany, 15; Richmond and Danville bonds 1890, 105½; Virginia and Tennessee 6s, 125; do. 6s, 1c1; Virginia 10.40 coupons, 54: Virginia Midland 2d, 1c8; do. 5th, 95¾; do. inc., 57; Wilmington, Columbia and Augusta, 109¾. The latest quotations are: Atlanta and Charlotte 1st, 104@104½; Baltimore and Ohio, —@2c5; do. bonds 1885, 104⅝@105: Central Ohio, 6s, 109¼@11c; Columbia and Greenville 1st, 1916, 10c½@101; Marietta and Cincinnati 7s, 1891, 131@132: do. 7s, 1896, 1c1@101½; do. 8s, 1890, 54⅞@55¼; Northern Central, 55@55⅝; do. 6s, 1885, 102⅞@103½; do. 5s, Series A, —@99¾; do. B. 95¼@96; Ohio and Mississippi, Springfield div. 1st, 115¼@115¾; Richmond and Danville gold 6s, 93¾@95; Virginia consol., 54@55; do. 1c-40s, 39¾@—; do. 3s, new, 48@48½; Western Maryland 1st, unindorsed, 1c9@109⅞; do. 2d pref., 109¾@—.

OFFICE CENTRAL PACIFIC RAILROAD COMPANY,
SAN FRANCISCO, Jan. 5, 1883.

THREE DOLLARS PER SHARE WILL be paid on presentation of dividend warrant No. 15 on or after Feb. 1, at this office, or at the office of the company, No. 23 Broad-st., New York. Transfer books will be closed from 3 P. M., Jan. 15, to 10 A. M., Feb. 3. By order of the Board of Directors.

E. H. MILLER, Jr., Secretary.

ILLINOIS CENTRAL RAILROAD COMPANY.
FORTY-FIRST SEMI-ANNUAL CASH DIVIDEND.

The Board of Directors have declared a dividend of THREE AND ONE-HALF per cent in cash, payable March 1, 1883, to the shareholders of the ILLINOIS CENTRAL RAILROAD COMPANY as registered at the close of business on Feb. 10 They have also declared an extra dividend of ONE-HALF OF ONE per cent in cash, payable at the same time to said shareholders, out of the earnings of the SOUTHERN DIVISION for the six months ending Dec. 31, 1882. The stock transfer-books will be closed from and after Feb. 10, until the morning of March 5.

L. V. F. RANDOLPH, Treasurer.

NEW YORK, Jan. 18, 1883.

THE LAKE SHORE AND MICHIGAN SOUTHERN RAILWAY CO.,
TREASURER'S OFFICE,
GRAND CENTRAL DEPOT,
NEW YORK, Dec. 22, 1882.

THE BOARD OF DIRECTORS OF THIS COMPANY have this day declared a quarterly dividend of TWO PER CENT upon its capital stock, payable on THURSDAY, the FIRST day of FEBRUARY next, at this office.

The transfer books will be closed at 3 o'clock p. m. on FRIDAY, the 29th inst., and will be reopened on the morning of Monday the 5th day of February next.

F. W. VANDERBILT, Acting Treasurer.

GEO. R. WOOD,

IRON AND RAILWAY BUSINESS.

Steel and Iron Rails,

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Blacksmiths', Machinists' and Tinmen's Supplies.

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NATIONAL EXPOSITION

—OF—

RAILWAY APPLIANCES,

TO BE HELD IN

CHICAGO, from THURSDAY, the 24th day of May, to SATURDAY, the 23d day of June, 1883, in the INTER-STATE EXPOSITION Buildings, the largest and best adapted for the purpose in the United States.

GOLD, SILVER AND BRONZE

MEDALS

For Superior Merit.

An abundance of STEAM POWER for running Machinery, and tracks for Locomotives and Cars.

Scientific and Practical Tests by the ablest Scientists and carefully selected Committees.

The Financial Stability of the Exposition secured by a GUARANTEE FUND of

FIFTY THOUSAND DOLLARS.

The proceeds, after payment of Expenses, to be devoted to BENEVOLENT PURPOSES connected with the RAILWAY SERVICE.

All material and articles properly coming under the head of RAILWAY APPLIANCES or SUPPLIES admitted.

For FULL INFORMATION address the SECRETARY, care GRAND PACIFIC HOTEL, CHICAGO.

E. H. TALBOTT, *Secretary.* LUCIUS FAIRCHILD, *President.*

COMMISSIONERS:

Hon. LUCIUS FAIRCHILD, Ex-Governor of Wisconsin and late Minister at Madrid, Spain.
GEO. M. PULLMAN, President Pullman's Palace Car Co., Chicago.
AARON FRENCH, Pittsburgh Car-Spring Co., Pittsburgh.
J. MCGREGOR ADAMS, Adams and Westlake Mf'g Co. etc., Chicago.
E. V. CHERRY, Vice-President Post & Co., Railway Supplies, Cincinnati.
A. G. DARWIN, President Allen Paper Car-Wheel Co., New York.
O. W. POTTER, President North Chicago Rolling Mill Co., Chicago.
H. E. SARGENT, late General Manager Northern Pacific Railroad, Chicago.
JAMES MCMILLAN, President Michigan Car Co., etc. Detroit.
GEO. WESTINGHOUSE, Jr., President Westinghouse Air-Brake Co., etc. Pittsburgh.
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WM. S. EATON, National Tube Works Co., etc. Boston.
WM. CHISHOLM, President Cleveland Rolling Mill Co., etc. Cleveland.
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Six new 4ft. 8½ Gauge Locomotives, cylinders 17x24 weight 35 tons. November and December delivery.
Two new 3ft. Gauge Locomotives, Cylinders 12x18, weight 20 tons. December and January delivery.
Cars—Passenger and Freight Cars of all descriptions for early delivery.
Rails—16lb., 20lb. 30lb. 35lb. and 56lb. Rails.
Car Wheels and Axles.
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Brakes can be applied to every Car in the longest train, from the engine or caboose, or from any car in the train. It can be readily attached to any car, and adapted to ordinary brake beams, shoes, etc. There is no possibility of damaging wheels by "sliding."

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RAILROAD AND CANAL DIVIDEND STATEMENT.

Showing the amount of Stock Outstanding, the Dividend Periods and the date of last Dividend.

Marked thus(*)are leased roads.	Stock out-standing.	Divide'd Periods.	Last Dividend Payable.
Albany and Susq*...100	2,500,000	semi-an	Jan. '83 2
Atch., Top. and S. Fe100	54,000,000	q'arterly	Feb. '83 1½
Atlanta and W. Point100	1,232 200	semi-an	Jan. '82 6
Atlantic and St. Law*100	5,840,000	semi-an	Sept. '82 3
Augusta and Savan'h100	1,022,900	semi-an	June'81 3½
Avon,Geneseo&MtM*100	225,000	semi-an	July '81 3
Baltimore and Ohio..100	14,792,566	semi-an	Nov. '82 5
" " pref.100	5,000,000	semi-an	Jan. '83 3
Washington Br....100	1,650,000	semi-an	Nov. '82 5
Berkshire*..... 100	600,000	q'arterly	Apl. '82 1¾
Boston and Albany..100	20,000,000	q'arterly	Dec. '82 2
Bos.&N.Y.AirLine pf.100	2,795,227	q'arterly	June'82 1
Bos.,Cl.,F.&N.B.pref.100	1,750,100	semi-an	Oct. '82 3½
Bos.,Conc.&Mont.pf*100	800,000	semi-an	Nov. '82 3
Boston and Lowell..500	3,940,000	semi-an	Jan. '83 2½
Boston and Maine...100	6,921,274	semi-an	Nov. '82 4
Boston & Providence100	4,000,000	semi-an	Nov. '82 4
Attleborough Br...100	131,700	semi-an	Jan. '83 3½
Bos.,Revere B &Lynn100	419,400	semi-an	Jan. '83 3
Buffalo,N. Y. & Erie*.100	950,000	semi-an	Dec. '82 3
Buff.,Pitts. & West.pf. 50	1,457,000	.....	Jan. '83 3
Camden & Atlantic.. 50	377,400	q'arterly	Nov. '82 3
" " pref. 50	880,650	q'arterly	Nov. '82 4
Camden & Burl. Co..100	381,925	semi-an	July '82 3
Canada Southern....100	15,000,000	.....	Feb. '81 2½
Cape May &Millville* 50	447,000	semi-an	June'81 3
Catawissa*..... 50	1,159,500	annual	Oct.'82$2½
" pref..... 20	2,200,000	semi-an	Nov. '82 3½
" new pref.. 50	1,000,000	semi-an	Nov. '82 3½
Cayuga and Susq.*.. 50	589,110	semi-an	July '81 4½
Cedar Rapids&Mo.R*100	6,850,400	q'arterly	Feb. '83 1½
" " pref.100	769,600	semi-an	Feb '83 3½
Central of Georgia...100	7,500,000	semi-an	June '82 4
Central of New Jersey100	18,563,200	q'arterly	July '76 2½
Central Ohio*..... 50	2,437,950	semi-an	J n.'83 3
" pref.... 50	411,550	semi-an	Jn. '83 3
Central Pacific 100	59,275,500	semi-an	Feb. '83 3
Cheshire preferred ..100	2,155,300	semi-an	Jn. '83 1½
Chicago and Alton...100	11,181,741	semi-an	Sept. '82 4
" " pref 100	2,245,400	semi-an	Sept. '82 4
Chi., Burl. & Quincy.100	69,508,105	q'arterly	Dec. '82 2
Chi., Iowa & Nebras*.100	3,916,200	semi-an	Jan. '83 4
Chi., Mil. & St. Paul.100	20,404,261	semi-an	Oct. '82 3½
" " pref 100	14,401,483	semi-an	Oct. '82 3½
Chi. & N. Western...100	14,988,257	semi-an	Dec. '82 3½
" pref.100	21,525,353	q'arterly	Dec. '82 2
Chi., R. I. & Pacific..100	41,960,000	q'arterly	Feb. '83 1¾
Chi. and West Mich .100	6,151,000	semi-an	Feb. '82 2½
Chi.,St.P.,M.&O.pref.100	10,390,000	q'arterly	Jan. '83 1¾
Cin.,Ham.&Dayton ...100	3,500,000	semi-an	Jan. '83 3
C., Ind., St. L. & Chi..100	6,000,000	q'arterly	Jan. '83 1½
Cin., Sand. & Clev.pf. 50	429,037	semi-an	Nov. '82 3
Clev.,Col.,Cin. & Ind.100	14,991,800	.....	Feb. '83 2
Clev. and Pittsburg* 50	11,244,336	q'arterly	Dec. '82 1¾
Columbus & Xenia*. 50	1,786,200	q'arterly	Dec. '82 2
Col.,Hock.Val.&Tol..100	10,316,500	.....	Jan. '83 2½
Concord 50	1,500,000	semi-an	Nov. '82 5
Concord and Ports.*.100	350,000	semi-an	Jan. '83 3½
Conn.& Passump.Riv100	2,244,400	semi-an	Aug '82 3
Connecticut River ..100	2,100,000	semi-an	Jan. '83 4
Cumberland Valley.. 50	1,292,950	q'arterly	Jan. '83 2½
" 1st pref 50	241,900	semi-an	Oct. '82 4
" 2d pref. 50	243,000	semi-an	Oct. '82 4
Danbury & Norwalk. 50	600,000	.....	Oct. '82 2½
Dayton and Mich.*.. 50	2,402,573	semi-an	Oct. '82 1¾
" " pref. 50	1,211,250	q'arterly	Jan. '83 2
Delaware*..... 25	1,468,940	semi-an	Jan. '83 3
Del. & Bound Brook*100	1,652,000	q'arterly	Nov. '82 1¾
Del., Lack.& Western 50	26,200,000	q'arterly	Jan '83 2
Denver & Rio Grande..100	29,160,000	q'arterly	Jan '82 1½
Detroit, Lans. & Nor.100	1,825,600	semi-an	Aug.'80 2½
" " pref.100	2,503,380	semi-an	Aug.'82 3½
Dubuque&Sioux C'y*100	5,000,000	semi-an	Oct. '82 3
East Pennsylvania*., 50	1,709,550	semi-an	Jan. '83 3
East Mahanoy*..... 50	392,950	semi-an	Jan. '83 3
Eastern (N. H.).....100	492,500	semi-an	Dec. '82 2½
Eel River.....100	3,000,000	q'arterly	Dec. '82 $1
Elmira&Williamsp't* 50	500,000	semi-an	Nov. '82 1½
" " pref. 50	500,000	semi-an	July '82 3½
Erie and Pitsburg*.. 100	1,998,400	q'arterly	Dec. '82 1¾
Evansville & Terre H.100	100,000	semi-an	Jan. '83 6b
Fitchburg..... 100	4,500,000	semi-an	Jan. '833
F. & P. Marquette pf.100	6,500,000	semi-an	Jan. '83 3½
Ft.W. & Jackson pref.100	2,000,000	.....	May '82 2
Georgia. 100	4,200,000	q'arterly	July '82 2½
Granite 100	1,250,000	semi-an	Jan. '83 3
Green w'h&Johnsonv.100	118,000	semi-an	Jan. '83 4
Han. & St. Jo. pref .100	5,083,024	semi-an	Feb. '83 3
Harrisbg&Lancaster 50	1,182,500	semi-an	July '82 3½
H'ford &Conn. West'n.100	.....	.....	Nov. '82 1½
Housatonic pref. 100	1,180,000	q'arterly	Jan. '83 2
Illinois Central.....100	39,000,000	semi-an	Mar. '83 4
Ia.Falls & Sioux City*100	4,623,500	q'arterly	Dec. '82 1¾
Iowa R.R.& Land Co.100	7,620,000	q'arterly	Mar. '83 1
Jeffersonv. Mad.&Ind100	2,000,000	q'arterly	May '82 1¾
Joliet and Cicag*..100	1,500,000	q'arterly	June'82 1¾
Kan. C.,Ft.S.&Gulf...100	4,000,000	.....	Feb. '82 2
" " pref...100	2,750,000	semi-an	Aug. '82 4
Kentucky Central...100	500,000	semi-an	June'81 1
" " pre f...100	5,583,500	semi-an	June'81 1
Lake Shore&Mich.So.100	49,466,500	q'arterly	Feb. '83 2
" " (guar.)100	533,500	semi-an	Feb. '83 5
Lawrence*..... 50	450,000	q'arterly	Jan. '83 2
Lehihgh Valley..... 50	27,496,895	q'arterly	Jan. '83 2
" " pref. 50	106,300	q'arterly	Jan. '83 2

Marked thus(*)are leased roads.	Stock out-standing.	Divide'd Periods.	Last Dividend Payable.
Little Miami..... 50	4,637)300	q'arterly	Dec. '82 2
Little Rock & Ft. S..100	4,096,135	.....	July' 81 108
Little Schuylkill*.. . 50	2,646,100	semi-an.	Jan. '83 3½
Long Island..... 50	10,000,000	q'arterly	Feb. '83 1
Louisville & Nashv..100	19,130,913	semi-an.	Feb. '82 3
Lowell & Andover...100	500,000	semi-an.	Jan. '82 3½
Lykens Valley.....100	600,000	q'rterly.	Oct.' 81 2½
Manchester & Law..*00	1,000,000	semi-an.	Nov. '82 5
Manhattan.....100	13,000,000	.....	.....
" " 1st pref.100	6,500,000	q'rterly.	Jan. '83 1½
" " 2d pref.100	6,500,000	q'rterly.	Jan. '83 1½
Marietta& Cincinnati 50	1,386,350	.....	.....
" " 1st pref 50	8,105,600	semi-an.	Sep. '66 38
Marq.Hout.& Ont.....100	2,306,600	.....	Feb. '83 4
" " pref...100	2,259 026	semi-an.	Feb. '83 4
Massawippi*..... 100	400,000	semi-an.	Aug. '82 3
Metropolitan 100	6,500,000	q'rterly-	Oct. '82 1½
Michigan Central....100	18,738,204	.....	Feb. '83 2
Middlesex Central...100	280,000	semi-an.	Aug.'82 3
Mill Creek& Minehill* 50	323,000	semi-an.	Jan. '83 5
M.Hill& Schuyl.Hav* 50	4,022,500	semi-an.	Jan. '83 3½
Missouri Pacific.....100	28,169,800	q'rterly.	Jan. '83 1¾
Mobile&Montgomery100	3,022,517	semi-an.	Feb. '80 2½
Morris and Essex.... 50	15,000,000	semi-an.	Jan. '83 3½
Mt Carbon&PtCarbon 50	282,350	semi-an.	Jan. '83 6
Nashua and Lowell..100	800,000	semi-an.	Nov. '82 4
Nashua & Rochester.100	1,305,800	semi-an.	Oct. '82 1½
Nashv. & Decatur...100	1,827,000	semi-an.	June'81 3
Nash.,Chat.&StLouis 25	6,670,325	semi-an.	Apl. '82 1½
Naugatuck.....100	2,000,000	semi-an.	July '82 5
Nesquehoning Val'y* 50	1,300,000	semi-an.	Sept.'82 3
N.Castle&Beaver Val* 50	600,000	q'rterly.	Oct. '81 —
NewLondonNorth'n*100	1,500,000	q'rterly.	Oct. '82 1½
N. Y. Cen. & Hud. R.100	89,428,330	q'rterly.	Jan. '83 2
N. Y. and Harlem....100	7,950,000	q'rterly.	Jan. '83 4
" " pref.100	1,500,000	q'rterly.	Jan. '83 4
" City Line.. —	.....	annual	Apl. '82 3
N.Y.,LakeErie&West.100	77,087,600	.....	.....
" " pref.100	7,987,500	annual..	Jan. '83 6
N. Y., N. H. & Hart..100	15,500,000	semi-an.	Jan. '83 5
N. Y., Prov. & Boston100	3,000,000	q'rterly.	Nov. '82 2
Niag.Bridg&Canand*100	1,000,000	semi-an.	July '81 3
North Carolina*.....100	3,000,000	semi-an.	Sep. '81 3
" " pref.100	1,000,000	semi-an.	Sep. '81 3
N. Eastern (S.C.) pref100	86,000	semi-an.	May '81 4
Norfolk & Western pref.	15,000,000	q'rterly.	Dec. '82 $1
North Pennsylvania. 50	4,527,150	q'rterly.	Nov. '82 1¾
Northern Central.... 50	6,142,000	semi-an.	Jan. '83 4
Northern N. Hampsh100	3,068,400	semi-an.	Dec. '82 3
Northern Pacific pref100	42,312,589	.....	Jan. '83 11.1
Norwich&Worcester*100	2,604,400	semi-an.	Jan. '83 5
Oregon &Transcont'l.100	40,000,000	q'rterly.	Jan. '83 1½
Old Colony.....100	7,333,800	semi-an.	Jan '83 3½
Oregon R'way&Nav.100	6,000,000	q'rterly.	Feb. '83 2½
Oswego & Syracuse..100	1,320,400	semi-an.	Aug.'81 4½
Panama..... 100	7,000,000	semi-an	Jan. '83 6½
Paterson & Hudson*.100	630,000	semi-an.	July '82 4
Paterson & Ramapo.100	248,000	semi-an.	July '82 4
Pember.&Hightst'n*. 50	342,150	semi-an.	Jan. '82 3
Pennsylvania..... . 50	83,786,570	semi-an.	Nov. '82 4½
Pennsylvania Co.. .. 50	20,000,000	annual	Dec. 82 4
Peoria & Bureau Val*100	1,200,000	semi-an.	Aug. '82 4
Philadelphia & Erie*. 50	7,013,700	semi-an.	.....
" " pfd 50	2,400,000	semi-an.	Jan. '75 4
Phil,Ger.&Norrist'n* 50	2,231,900	q'rterly.	Dec. '82 3
Phil. and Reading... 50	32,726,375	q'rterly.	Jan. '76 2½
" " pref. 50	1,551,800	q'rterly.	July '76 3½
Phila. and Trenton..100	1,259,100	q'rterly.	Jan. '83 2½
Phila., Wil. and Balt. 50	11,585,750	semi-an.	Jan. '83 4
Pittsb., Ft. W. & Chi.*100	19,714,285	q'rterly.	Jan. '83 1¾
" Special Imp.100	6,770,900	q'rterly.	Jan. '83 1¾
Pittsfield&N.Adams..100	450,000	semi-an.	Jan. '83 2½
Portl., Saco & Portsm100	1,500,000	semi-an.	Jan. '83 3
Providence &Worces.100	2,000,000	semi-an.	Jan. '83 3
Rensselaer&Saratog.*100	7,000,000	semi-an.	Jan. '83 4
Richmond& Danv....100	5,000,000	q'rterly.	Aug. '82 2
Richmond & Petersb100	1,009,300	semi-an.	Aug. '82 2
Roch.&Geneses Val.*100	555,200	semi-an.	Jan. '83 3
RomeWater.&Ogdens100	5,293,900	.....	Jan. '83 3
Rutland preferred.. 100	4,000,000	semi-an.	Sept. '82 1
St.L.,Alt. & T.Haute.100	2,300,000	.....	.....
" " pref.100	2,468,406	.....	Dec. '82 4
St.L.&S.Fran.1st pref100	4,500,000	semi-an.	Feb. '83 3½
St.L.,I.Mt.&South'n.100	21,459,921	semi-an.	Feb. '74 3
St.L.,Jac'ville & Chic.100	1,293,000	.....	Aug. '82 4½
" " pref.100	1,034,000	.....	Aug. '82 4½
St. P. & Duluth pref.100	4,705,000	semi-an.	Jan. '83 3½
St. P., Minn. & Man..100	20,000,000	q'rterly.	Feb.'83 2
Schuylkill Valley*... 50	576,050	semi-an.	Jan. '83 2½
Seaboard & Roanoke.100	1,229,600	semi-an.	Nov. '82 5
Shamokin V.&Pottsv 50	669,450	semi-an.	Feb. '82 3
Shore Line*.....100	1,000,000	semi-an.	July '82 4
Sioux C.&Pacific pref100	169,000	semi-an.	Oct. '82 3½
South Br. (N. J.)*....100	438,300	semi-an.	Jan. '82 3
South Western (Ga.)*100	3,892,300	semi-an.	Dec. '82 3½
Stockbridge&Pitts.*.100	448,700	q'rterly.	Jan. '83 1½
Syr.,Bingham&N.Y.*100	2,500,000	semi-an.	Aug. '82 2
Terre Haute & Ind...100	1,988,150	semi-an.	Feb. '83 4
Union Pacific.....100	60,854,105	q rterly.	Jan. '83 1¾
United Cos of N. J.*.100	20,490,000	q'rterly.	Jan. '83 2½
Utica, Shenango&S V100	4,000,000	semi-an.	Nov.'82 3
Utica and Black Riv.100	1,772,000	semi-an.	Sept '82 2
Vermont and Mass..100	3,050,000	semi-an.	Oct .'82 3
Ve ont Valley.... 100	1,000,000	.....	Jan. '83 3
Wab, St.L.&Pac.pref.100	22,615,100	q'rterly.	Nov.'81 1½

Markedthus(*)are leased roads.	Stock out-standing.	Divide'd Periods.	Last Dividend Payable.
Ware River*.....100	750,000	semi-an.	Jan. '83 3½
Warren (N. J.).....100	1,800,000	semi-an.	Apl. '82 3½
Warwick Valley.....100	340,000	semi-an.	July '82 2½
Westchest&Phil.pref100	821,300	semi-an.	July '80 2
West Jersey.....100	1,359,750	semi-an.	Sept. '82 3
Wilmingt'n&Weld'n.100	1,456,200	semi-an.	July '82 3
Wil., Col., & Aug 100	960,000	semi-an.	Jan. '83 3
Winchester&Poto'c.*100	180,000	semi-an.	Jan. '83 3
Winchester&Strasb.*100	74,700	semi-an.	Jan. '83 3
Worcester & Nashua. 75	1,789,800	semi-an.	Jan. '83 1¾
HORSE-POWER R. R.			
Albany City.....100	200,000	annual	.... '80 5¼
Baltimore City..... 25	1,000,000	semi-an.	Jan. '83 3
Balt.,Cat.&El. Mills..100	80,000	semi-an.	Jan. '83 2½
BleeckerSt.&Ful.F'y.100	900,000	semi-an.	July '82 ¾
Boston&Chelsea pref. 50	110,000	semi-an.	Oct. '82 3
Broadway (Brooklyn)100	250,000	q'arterly	Oct. '82 6
B'way&7th Av,(N.Y.)100	2,100,000	q'arterly	Oct. '82 2
B'klyn&Hunter's Pt.100	400,000	semi-an.	Oct. '82 6
Brooklyn City.....100	2,000,000	q'arterly	Nov. '82 3½
Bushwick (Brooklyn)100	300,000	semi-an.	Oct. '82 6
Cambridge.....100	908,000	q'arterly	Oct. '82 4½
Cen.Park,N.& E.Riv.100	1,800,000	q'rterly.	Oct. '82 6
Christoph'r&TenthSt100	650,000	semi-an.	Aug.'82 2½
Citizens' (Phil.)..... 50	192,500	q'rterly.	Jan. '82 2½
Citizens' (Pbg.)..... 50	200,000	annual..	....'80 14½
Coney Island&Bklyn100	500,000	semi-an.	Oct. '80 5
Continental (Phil.) .. 50	580,000	semi-an.	Jan. '83 6
D.Dock,E.B'way&Bat100	1,200,000	q'arterly	Aug.'82 4
Eighth Av. (N. Y.)...100	1,000,000	q'rterly.	Oct. '82 3
42d St. & G. St. Ferry100	747,000	semi-an.	May '82 6
Frankf.&Southw (Ph) 50	600,000	q'rterly.	Oct. '82 6
Germantown, (Ph.).. 50	1,540,902	q'rterly.	Jan. '83 2½
Girard College (Ph.) . 50	500,000	semi-an.	July '71 3
Grand St. & Newton..100	170,091	semi-an.	July '81 2½
Green&Coates St.(Ph) 50	708,650	q'rterly.	Jan. '83 3
Heston,Mantau&F'm 50	299,381	semi-an.	Jan. '75 4
Highland.....100	600,000	semi-an.	July '82 4
Lomb.&SouthSts(Ph) 25	195,000	semi-an.	Oct. '75 4
Lynn and Boston....100	200,000	semi-an.	Nov.'82 4
Malden and Melrose.100	165,000	.....	.....
Metropolitan (Bost.). 50	1,500,000	semi-an.	Jan. '83 4
Middlesex (Boston)..100	650,000	semi-an.	Nov. '82 3½
N.Y.,Bay Ridge&Jam100	150,000	.....	Oct. '78 7
Ninth Av. (N. Y.)....100	797,320	.....	.....
Orange &Newark....100	282,555	.....	.....
People's (Phila.) pref. 25	115,250	.....	July '82 2
Philadelphia City... 50	475,000	semi-an.	July '82 4
Phila. and Darby.... 20	200,000	semi-an.	July '81 3½
Phila.&Grey's Ferry. 50	308,000	semi-an.	Jan. '82 6
Pbg,Alleg.&Manches. 50	300,000	q'rterly.	Oct. '81 3
Ridge Avenue (Ph.).. 50	420,000	semi-an.	Oct. '81 11
Second Avenue (N.Y.)100	1,199,500	semi-an.	July '82 4
Second&ThirdSt.(Ph) 50	771,076	q'rterly.	Jan. '83 4
17th &19th sts (Ph.).. 50	250,000	semi-an.	July '81 3
Sixth Avenue (N. Y.)100	750,000	semi-an.	May '82 5
Somerville (Boston).100	113,000	semi-an.	Nov. '82 3
South Boston..... 50	600,000	semi-an.	Jan. '83 4
Third Avenue, N. Y..100	2,000,000	q'rterly.	Aug '82 5
13th and 15th sts.,Ph 50	334,529	q'rterly.	Jan. '83 4
23d street, N. Y.....100	600,000	semi-an.	Aug.'82 4
Union, Boston.....100	374,300	semi-an.	Jan. '82 4
Union, Phila..... 50	1,005,000	semi-an.	Jan. '82 7
West Philadelphia... 50	750,000	semi-an.	July '77 10
CANALS.			
Chesapeake and Dela 50	2,078,038	semi-an.	June'75 2
Delaware Division... 50	1,633,350	semi-an.	Aug. '82 $1
Delawa. and Hudson100	20,000,000	q'rterly.	Dec. '82 1¾
Delaware & Raritan*.100	5,847,400	q'rterly.	Jan. '83 2½
Lehigh Coal and Nav 50	11,204,250	semi-an.	Dec. '82 2
Monongahela Nav... 50	1,004,500	semi-an.	Jan. '83$3
Morris, consolidated.100	1,025,000	semi-an.	Aug. '82 2
" preferred....100	1,175,000	semi-an.	Aug.'82 5
Pennsylvania..... 50	4,501,200	.....	.....
Schuyl. Nav., com.*. 50	859,100	annual..	Oct.'82 50c.
" ' pref... 50	3,200,000	annual..	Oct. '82 $1
MISCELLANEOUS.			
Adams Express.....100	12,000,000	q'rterly.	Dec. '82 2
American Express... 50	18,000,000	semi-an.	Jan '83 3
Amoskeag Manuf.Co.100	3,000,000	semi-an.	June'81 5
Calumet&HeclaMin'g 25	100,000 S.	q'rterly.	Feb. '83 $5
Central Mining Co...100	.....	semi-an.	Feb.'82 2½
Consolidation Coal..100	10,250,000	semi-an.	Jan. '82 2
George's Creek C.&I.100	.....	semi-an.	Jan. '83 3
Maryland Coal.....100	4,400,000	semi-an.	Feb. '76 1½
Mariposa L. &Mining100	10,000,000	.....	.....
" pref100	5,000,000	.....	.....
Missouri Val.LandCo100	200,000	semi-an.	Jan. '83 $6
National Tube Works100	2,000,000	q'rterly.	Jan. '83 2
Pac. Mail Steamship.100	20,000,000	q'rterly.	Sept.'69 3
Pennsylvania Coal... 50	5,000,000	q'rterly.	Nov. '82 3
Pullman Palace Car..100	10,032,800	q'rterly.	Feb.'83 2
Quicksilver, com....100	5,708,700	.....	May '82 0.4
" pref....100	4,291,300	.....	May'82 6
Quincy Mining Co... 25	40,000 shs	semi-an.	Aug. '82 $5
Quincy R. R. Bridge.100	1,750,000	semi-an.	Jan. '83 5
SiouxC.&I.F.L.&L.Co100	500,000	semi-an.	Dec. '82 3½
Spring Mt. Coal.....100	1,500,000	semi-an.	Dec. '82 3½
Topeka Equip'nt Co.100	255,500	semi-an.	Oct. '82 5
United States Ex....100	7,000,000	q'rterly	Nov. '80 1
Wells-Fargo & Co. Ex100	6,250,000	semi-an.	Jan. '83 4
Western Union Tel..100	80,000,000	q'rterly.	Jan. '83 1½

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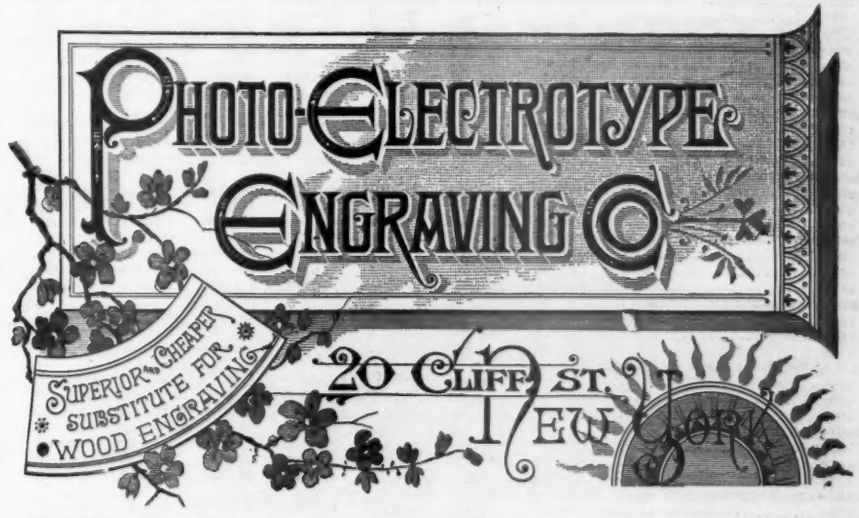

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RAILROAD EARNINGS.—MONTHLY.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Burl., Cedar Rap. & Northern:													
1880	184,316	165,170	188,325	141,652	149,504	153,378	143,432	160,160	179,804	204,991	189,330	193,419	2,053,484
1881	167,750	124,510	148,551	184,680	165,630	205,912	174,351	209,112	221,801	221,748	202,180	232,812	2,259,037
1882	252,823	225,631	224,107	178,304	199,278	211,257	198,476	224,921	261,439	300,155	278,439	.....	.....
Central Pacific:													
1880	1,200,615	1,070,487	1,373,438	1,356,716	1,778,488	1,724,930	1,840,067	1,973,438	1,994,997	1,120,229	2,199,466	1,905,221	20,508,113
1881	1,602,907	1,454,218	1,709,638	1,872,370	2,091,411	2,159,382	1,899,346	2,088,519	2,185,303	2,507,857	2,297,971	2,225,179	24,094,101
1882	1,839,469	1,720,675	1,969 737	2,054,687	2,342,298	2,229,105	2,020 000	2,277,000	2,474,000	2,409 000	2,242,000	.....	.....
Chesapeake and Ohio:													
1880	202,335	198,681	222,762	221,559	199,443	214,352	238,236	259,110	247,303	211,820	240,795	218,009	2,674,308
1881	162,540	184,389	228,479	227,343	252,235	241,135	225,096	262,858	247,144	236,396	230,022	203,562	2,702,762
1882	210,455	209,708	208,981	267,454	255,939	260,753	306,831	371,175	332,219	347,882	287,850	.....	.....
Chicago and Alton:													
1880	534,054	497 013	626,473	542,961	616,128	617,524	708,906	761,120	767,349	785,199	696,776	574,695	7,718,198
1881	487,890	461,641	529,915	558,190	548,556	635,860	676,205	769,751	774,790	771,844	672,380	635,307	7,553,988
1882	570,447	530,480	584,483	561,787	553,412	613,886	671,537	800,624	881,109	812,032	748,151	.....	.....
Chicago and Northwestern:													
1880	1,154,632	1,131,683	1,361,725	1,294,573	1,875,608	1,671,177	1,699,686	1,767,938	2,020,245	2,105,217	1,855,622	1,477,902	19,416,007
1881	1,240,664	963,204	1,178,795	1,474,612	1,879,006	2,306,440	1,983,032	2,315,164	2,292,676	2,341,098	2,019,038	1,855,477	21,849,209
1882	1,644,935	1,474,176	1,672,931	1,668,741	2,110,947	2,022,700	2,025,736	2,699,755	2,497,053	2,532,100	2,069,287	.....	.....
Chicago, Burlington and Quincy:													
1880	1,432,740	1,411,870	1,732,518	1,489,894	1,909,627	1,682,956	1,773,643	1,834,321	1,862,285	1,934,762	1,837,860	1,552,018	20,454,494
1881	1,307,948	1,034,821	1,418.149	1,574,371	1,679,455	2,083,803	1,888,358	2,173,945	2,262,981	2,031,001	1,816,133	1,905,490	21,324,150
1882	1,658,834	1,457,300	1,566,217	1,530,838	1,505,261	1,437,164	1,625,006	2,086,858	2,186,400	2,270,444	.....	.....	.....
Chicago, Milwaukee and St. Paul:													
1880	764,298	738,749	900,675	871,041	1,134,745	1,037,958	1,026,708	991,297	1,257,677	1,493,620	1,472,037	1 397,308	13,086,119
1881	990,847	682,717	916.989	1,259,946	1,538,491	1,729,811	1,568,706	1,678,361	1,644,676	1,591,052	1,560.597	1,855,000	17,025,462
1882	1,435,000	1,377,000	1,561,000	1,518,000	1,629,000	1,620,000	1,465,000	1,545,000	1,950,000	2,251,000	2,072,000	.....	.....
Chicago, St. Paul, Minneapolis and Omaha:													
1880	193,827	173,078	259,783	259,208	232,146	218,093	236,995	251,013	300,833	342,052	342,894	312,173	3,122,097
1881	257,786	158,594	251,648	261,211	350,124	404,562	383,202	385,586	373,370	379,029	392,921	391,950	3,981,296
1882	307,498	315,100	405,779	356,558	406,420	363,109	331,480	394,555	482,997	546,671	517,595	.....	.....
Cincinnati, Indianapolis, St. Louis and Chicago:													
1880	155,697	172,541	198,220	168,199	186,995	200,332	204,138	233,478	343,627	239,881	209,014	198,254	2,412,185
1881	182,523	171,511	191,005	183,710	191,096	192,299	177,161	229,858	228,653	221,320	211,014	192,623	2,296,916
1882	200,042	186,879	208,066	204,269	199,110	195,948	209,564	.....	259,379	.....	219,732	.....	.....
Denver and Rio Grande:													
1880	134,759	126,922	160,883	164,882	193,925	295,455	373,132	400,133	406,583	473,318	408,562	349,196	3,478,007
1881	307,476	317,681	398,493	433,111	514,767	584,230	548,284	606,193	589,287	638,432	547,055	643,417	6,206,812
1882	491,914	412,987	535,055	559,917	614,298	537,462	495,797	574,040	595,306	630,598	512,965	.....	.....
Hannibal and St. Joseph:													
1880	176,079	166,965	216,061	206,735	191,317	179,396	224,312	238,081	233,448	242,214	207,147	279,635	2,561,366
1881	154,401	122,874	176,356	190,812	172,950	190,740	201,899	210,240	215,103	231,913	195,607	180,376	2,230,961
1882	138,284	154,717	168,798	148,913	154,917	155,030	184,347	258,628	239,196	238,442	249 252	.....	.....
Illinois Central:													
1880	595,212	613,806	613,008	535,732	665,120	681,736	724,095	732,755	806,836	880,211	783,120	673 182	8,304,812
1881	631,281	524,499	557,789	662,493	673,259	803,887	720,004	868,407	828,847	815,238	737 218	763,475	8,586,397
1882	728,173	689,387	695,371	674,603	674,749	663,746	752,251	813,600	828,238	865,325	752,144	.....	.....
Indiana, Bloomington and Western:													
1880	80,498	89,690	116,185	90,374	85,733	106,954	103,438	116,732	110,622	121,343	96,621	104,619	1,233,079
1881	90,283	83,261	192,085	203,677	200,064	199,846	190,125	272,174	247,332	225,678	200,450	156,697	.....
1882	195,824	175,755	206,235	205,934	182,554	186,133	206,072	278,814	273,100	269,046	256,998	.....	.....
Louisville and Nashville:													
1880	674,455	575,035	612,593	563,883	655,014	976,229	772,538	827,089	931,911	1,000,327	953,087	949,185	9,491,346
1881	812,118	805,124	947,959	855,704	828,726	1,227,885	817,135	876,192	951,566	1,002,950	1,065.223	1,153,779	11,344,361
1882	964,527	960,315	1,068,834	953,603	958,130	1,215,490	1,063,765	1,043,912	1,107,985	1,216,215	1,192.390	.....	.....
Mobile and Ohio:													
1880	250,116	204,095	168,302	140,091	129,248	121,855	131,621	140,593	184,247	264,714	251,368	287,372	2,273,622
1881	224,347	216,768	230,916	163,551	145,803	136,517	135,549	160,789	210,262	256,924	262,986	258,812	2,403,224
1882	150,676	158,590	148,166	141,957	134,378	135,184	136,398	140,443	160,031	265,201	295,110	307,643	.....
Nashville, Chattanooga and St. Louis:													
1880	205,634	191,154	169.457	155,466	158,839	144,130	151,594	169,326	167,473	178,266	182,087	175,966	2,049,484
1881	178,143	190,866	207,710	183,525	104,430	154,549	150,430	168 317	179,979	172,121	152,059	173,127	2,075,256
1882	156,994	159,961	161,005	154,155	135,556	119,074	160,991	168,304	168,999	180,319	181,336	.....	.....
New York and New England:													
1880	164,232	149,907	183,845	179,689	183,701	219,891	205,056	249,885	235,642	215,491	210,856	198 108	2,396,302
1881	189,749	173,614	212,019	216,913	217,185	231,518	246,821	280,524	299,573	261,206	240,764	237,729	2,809,255
1882	213,840	217,261	265,222	263,544	283,244	290,060	340,920	353,726	338,490	310,145	276,183	.....	.....
New York, Lake Erie and Western:													
1879	1,147,173	1,207,391	1,356,780	1,372,755	1,350,574	1,230,419	1,273,533	1,450,223	1,492,497	1,713,697	1,515,835	1,398,224	16,509,127
1880	1,296,381	1,252,218	1,644,958	1,643,151	1,592,544	1,661,812	1,580,976	1,606,874	1,786,417	1,899,010	1,799,338	1,726,788	19,149,361
1881	1,443,437	1,425,765	1,847,261	1,709,057	1,776,891	1,794,982	1,787,081	1,772,895	1,734,200	1,814,866	.....	.....	.....
Northern Central:													
1880	334,494	330,860	415,325	386,130	320,788	419,193	450,298	453,923	464,093	512,918	459,054	494,310	5,050,387
1881	386,157	382,657	452,906	487,273	465,588	487,287	440,811	498,008	429,565	449,664	487,160	476,622	5,443,697
1882	407,368	413,551	430,194	435,129	482,607	482,762	509,083	667,488	592,435	550,225	526,685	.....	.....
Northern Pacific:													
1880	81,390	77,259	119,357	185,700	217,613	253,105	241,277	223,500	330,300	358,456	300,822	220,993	2,629,710
1881	116,508	78,803	162,084	216,210	312,705	412,024	393,260	434,085	534,363	583,555	475,610	434,331	4,044,576
1882	239,800	269,000	384,000	438,000	568,332	631,342	679,240	727,377	789,700	834,460	761,324	.....	.....
Philadelphia and Erie:													
1880	224,307	245,372	327,678	334,947	311,470	331,024	308,699	347,532	322,737	367,082	324,966	281,919	3,727,733
1881	224,303	225,501	285,573	293,323	343,792	350,585	291,669	303,849	276,522	292,392	284,078	282,772	3,454,309
1882	252,727	246,246	265,311	277,851	341,415	347,614	377,206	420,329	386,455	397,164	369,583	.....	.....
St. Louis and San Francisco:													
1880	198,091	195,948	193,146	176,164	167,664	173,607	213,297	259,995	280,873	328,194	290,329	226,063	2,698,371
1881	212,435	178,234	262,050	265,298	283,399	260,254	252,333	286,373	279,064	308,569	284,320	287,914	3,160,245
1882	256,784	244,654	274,959	242,806	253,419	240,177	318,613	381,637	336,805	360,900	331,490	.....	.....
St. Louis, Alton and Terre Haute:													
1880	153,139	163,737	168,994	155,462	147,928	150,207	191,077	216,759	204,295	221,863	188,773	184,503	2,146,741
1881	175,725	166,012	201,137	197,447	172,177	165,896	165,393	189,180	196,368	204,238	169,795	153,852	2,112,801
1882	168,987	149,619	178,145	157,450	162,842	142,742	192,017	236,137	217,659	229,962	206,040	.....	.....
St. Louis, Iron Mountain and Southern:													
1880	555,983	490,195	451,560	408,241	349,053	363,454	432,655	565,869	671,219	688,365	632,052	656,951	6,265,597
1881	570,957	560,791	704,002	548,300	479,075	474,302	533,512	644,386	708,325	719,239	687,271	709 498	7,319,744
1882	516,370	501,127	585,008	581,977	519,120	529,760	515,519	675,981	724,160	809,394	843.973	753,515	8,764,773
St. Paul, Minneapolis and Manitoba:													
1880	180,239	137,645	261,798	333,014	281,899	243,407	272,089	232,579	274,188	345,057	300,675	297,641	3,160,231
1881	254,187	159,482	320,962	425,685	382,642	405,322	387,488	414,954	485,736	605,708	508,530	528,262	4,878,960
1882	395,461	418 358	531,004	570,890	858,902	856,417	853,296	801,759	832,776	979,057	913,335	.....	.....
Texas and Pacific:													
1880	245,785	219.165	215,070	174,177	141,083	153,066	195,711	226,073	266,570	303,666	312,184	301,858	2,754,408
1881	281,176	260,781	319,928	295,066	281,782	285,405	328,663	381,331	345,790	419,203	369,521	381,218	3,921,569
1882	310,785	255,644	332,911	359,543	409,228	384,713	367,215	439,918	470,613	541,901	619,655	.....	.....
Union Pacific Railway:													
1880	1,433,636	1,393.992	1,730,509	1,937,220	2,027,269	1,928,528	1,934,215	1,913.035	2,270,179	2,707,860	2,251,148	1,869,335	23,448,445
1881	1,339,799	1,374.740	1,674,860	1,766,894	2,319,238	2,884,774	2 528,826	2,638,659	2,844,357	3,169,530	2,723,608	2,267,004	27,451,831
1882	1,961,088	1.759,863	2,226,832	2,462,004	2,491,590	2,508,453	2,301,000	2,762,107	2,949,112	3,158,337	2,821,070	.....	.....
Wabash, St. Louis and Pacific:													
1880	776,790	759.451	978,629	892,024	948,773	953,468	1,966,742	1,189,478	1,178,950	1,501,203	1,131,787	1,050,816	12,428,119
1881	811,617	818,922	1,121,592	1,023,482	1,144,660	1,308,093	1,131,752	1,542,838	1,400,027	1,397,781	1,343,556	1,328,278	14,461,570
1882	1,220,965	1,134,768	1,315,776	1,378,194	1,204,864	1,149,632	1,418,837	1,772,544	1,682,382	1,595,680	1,525,715	.....	.....

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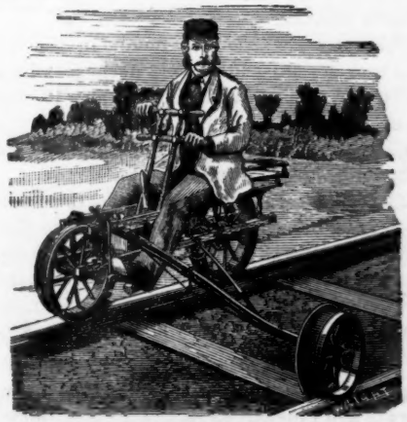

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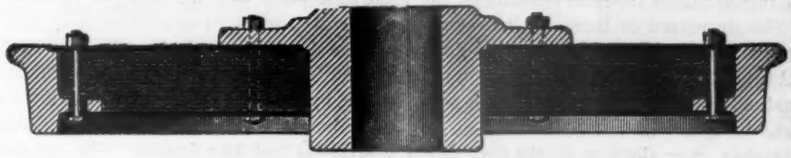

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Another Attempt to Solve the Problem of Cheap Car Fares.

ANOTHER effort is being made to cheapen the cost of running street cars, and thus proportionately reduce the rates of fare. This time it is a motor invented by B. C. Pole, an engineer in the service of the U. S. Government. As described by the Philadelphia *Record*, the motive power is delivered from an Otto or similar class of gas engine, into which coal gas is fed from a tank or reservoir. After its injection into the engine it is exploded, and this explosion, operating upon a series of pumps or valves, sets in motion the movements of the motor. In the first place, there are two fluid cylinders so arranged as to bring the pressure of the fluid upon a foot, which goes down upon the cobble-stones between the tracks, making a step of three feet two inches in length; and every time this grip-like device, fitted with teeth and nicely adjusted for securing purchase or hold, makes a step the motor is propelled or pushed forward three feet and two inches, the steps to be decreased or increased by regulation from the engineer. The foot is padded with rubber, which gives its stroke upon the earth such elasticity that there is no jar or sudden start.

Immediately over the top of the foot as it rests on the earth are two air cylinders connecting with the feet by a swinging shaft. Upon these feet they bear a pressure of 500 pounds. The action of the air and fluid pressure is simultaneous in effect, and when the power of propulsion by the latter has been expended the former lifts the feet, and the counter action of the hydraulic cylinders takes them forward for the next backward or propelling movement.

The operation of the machinery is described to be as simple as the movement of an elevator. The whole is regulated by a sliding handle, which can be understood after five minutes instructions. In describing the new invention to a reporter the engineer stated that the principal upon which motion was to be obtained was exactly the same as the pressure of the hind feet of a horse against the cobble-stones in starting a car. In deriving pressure the motion is entirely independent of the motor wheels. The engine is steered by the two front wheels, and is provided with a feature of simple construction by which, should it run off the track, the engineer can easily work it back again. The inventor has discovered what he terms the differential car-starter, which is a new art of propulsion by leverage. It consists of a wheel within a wheel. The back axle of the car terminates in two small wheels, running upon the inside of the flanges of two larger wheels. The larger wheels are operated by small friction wheels, the contact between them being upon the upper and outer periphery of the larger wheels. When the motive power presses the rear small wheels against the large wheels the effect is to cause the latter to revolve, bringing into effect the law of leverage, and the action of gravitation on the rear axle of the car causes the whole to move forward. This leverage comes into action whenever there is any resistance, such as starting a car loaded with passengers, going up grade or running over a stone or other obstruction. It is claimed that with such a starter a locomotive weighing 500 pounds less than the car will start it with ease. It is estimated that the use of the new car motor which is now being built will reduce the cost of running a street car per day from $19 to $12, including the conductor and driver. The weight of the motor is only 4,000 pounds, a weight easily carried by the street rails now in use.

Parlor Cars for the Canadian Pacific Railway.

AT the car shops of the HARLAN & HOLLINGSWORTH COMPANY two parlor cars have just been completed for the Canadian Pacific Railway that are beyond question the handsomest hardwood finish ever turned out in the United States. No expense has been spared to make them luxurious enough for the laziest, and attractive enough for the severest æsthete. As the cars are duplicates with the exception of the name, it is only necessary to describe one of them.

As to dimensions, the length in frame is sixty feet, by nine feet ten and one-half inches in width, by nine feet seven and one-quarter inches in height. The length including platforms is sixty-six feet four inches. The exterior of the body is paneled in solid mahogany, ornamented with gold, and picked in with black and delicate touches of vermilion, the whole being varnished. To the uninitiated, it may be well to state that the belt rail is the line of the car just below the windows. The names of the coaches, "Lachine" and "Carillon" are placed below the belt rail in the center of the car on what might naturally be called the vertical woodwork forming the side of the car, but what is technically called narrow matched and coved mahogany sheathing. The name is in black and gold to match the outside decoration. Above and below the name is a single gold band about three inches wide picked in with a graceful vinelike design in black. On the frieze board appears the name of the road "Canadian Pacific Railway." The design on all the corner posts and door posts is very handsome, the idea being a vase from which gracefully rise slender leaves, sunflowers, etc., a design that even Oscar Wilde would not have the heart to criticise adversely. The side of the car above the belt rail is paneled.

In the sides of the raised roof are pivoted ventilator sashes paned with colorless ornamental glass. Outside these ventilators are fine brass-work screens. The coaches are equipped with Miller platform and draw fixtures, double-acting hand brakes and Westinghouse automatic brakes. They are mounted on first-class four-wheel trucks, Canadian Pacific Railroad standard, the spread of wheels being eight feet, and are fitted with forty-inch English steel-tired wheels and French's quadruple elliptic and steel-coil springs.

Along the sides of the car are nine unusually large windows of heavy plate glass thirty-four inches high and forty-eight inches long. Each window is supplied with a spring roller curtain of the best English burgess and a handsome lambrequin of silk damassé, crimson figures on a gold ground, and having a deep fringe, the upper part of netted silk chenille and the lower of wooden tassels, alternately covered with crimson and gold silk.

The car is divided transversely into five sections, the large and center one for the parlor, a smoking room at each end, between these sections others sub-divided at one end into a gentlemen's toilet, and wash room and linen locker, and at the other into a ladies' toilet and wash room, linen locker and room for the Baker heater. The heater pipes pass along the entire length of the car and are gold bronzed. Above the pipes runs a carpeted rest to protect both the pipes and the feet of the passengers. The entire interior is rich and pleasing yet restful to the eye. The parlor is lighted by ten of the large windows, and furnished with twenty revolving arm chairs of solid mahogany, upholstered with crimson plush. Each chair can by a simple arrangement quickly be taken apart for cleaning. In the parlor between the windows are elegant heavy beveled glass mirrors sixteen by forty-four inches and on the bulkheads four more twenty-four by forty-eight. The interior wood work is of solid mahogany, inlaid with marqueterie, mainly in neutral tints, the figures being exquisite designs of flowers, vines, insects, birds and conventional forms. Throughout the entire car the ceiling is of oak veneer, having painted decorations in Japanese and other graceful figures. The car is lighted with Adams & Westlake's double-light gilt chandeliers, there being three in the parlor and one in each smoking room. Of portable fixtures, there are mahogany tables which can be placed between any two chairs, and large, fine brass wire screens to be placed in the windows in warm weather to protect passengers from the dust and cinders, while not obstructing the view.

The smoking rooms, which are alike, have walls of solid San Domingo mahogany with rosewood trimmings. On each side is a handsome and very durable sofa, upholstered and tufted in dark green morocco. For ventilating the smoking rooms, there is a drop sash in the end door, a ventilator over the platform and a pivoted transom.

These cars are absolutely unique in the fact that they are finished in solid mahogany both inside and outside, and in this they are different from any other cars ever turned out in this country as well as different from the standard adopted by any road in the United States.

The cars will be taken to Montreal this afternoon to be immediately placed upon the line between Montreal and Winnipeg, Manitoba, and will reach their destination in time for the inspection of visitors to the Grand Ice Carnival which will be held shortly at Montreal.—*Wilmington (Del.) Every Evening, Jan.* 18.

FIVE-CENT fares have proved a success on the Spruce and Pine Streets Railroad, Philadelphia. The annual report shows that the reduction of fares one year ago proved a wise movement, the income having increased largely, permitting an increased dividend, with a considerable balance in the treasury after providing a number of new cars and making other desirable improvements. Without waiting to be forced to it by legislation, other street-car companies in Philadelphia are discussing the propriety of coming down to five-cent fares.

Railroads of Connecticut.

THE report of the Connecticut Railroad Commissioners shows that the gross earnings in 1882 were $15,353,656, operating expenses $10,338,802, net earnings $5,024,217, which sum is 4 per cent less than the net earnings of 1881. Dividends, averaging 8.23 per cent on the capital stock, amounted to $2,635,071. The operating expenses are considerably in excess of those for 1881. The average cost of maintenance of road was $1,399 per mile, an increase of $267, and the highest cost is reported by the consolidated road—$2,833. The length of all the roads in the State, 962 miles; double-tracks, 121; sidings, 215. Stock issued and outstanding indebtedness is reported at $83,710,289, an increase of $12,204,243. The construction account is $74,879,789, an increase of $2,082,552; equipment account, $8,420,176, an increase of $638,681.

THE repairs on the New York and New England Railroad's transfer steamer Maryland are nearly completed, so that it is expected that very early in February trains will again run through from Boston to Philadelphia and Washing without change. The drawing-room car "General Putnam," which runs on this road in connection with the Norwich Line, is being refitted, and will be supplied with the Horton reclining chairs which will add greatly to its comfort. An elegant Tuscan red has been adopted as the standard color for all cars, and three cars which have just come out of the Norwood shops are painted in this color and ornamented with two narrow gilt stripes running the entire length under the windows present a very handsome appearance. These cars are to run between Boston and Denham.

THE new code of signals of the Boston, Concord, Montreal, White Mountains and Mount Washington Branch railroads went into effect on the 17th inst., governing movements of trains by telegraph, with twenty-six sections, and providing for strict control of all trains, both by night and day, on all parts of the line. Numerous checks are provided for signing telegrams, and various colored flags and lanterns at each station are to be universally used. B. H. Corning is to be train dispatcher of the Northern Division above Woodsville and George E. Randall for the Southern Division from Woodsville to Concord, with headquarters at Plymouth.

KLOMAN & BROS., of Pittsburgh, have furnished for the United States Spring Car Motor Company of Philadelphia two pieces of steel, which are claimed to be the largest ever rolled in the world. The first piece was 327 feet long, 6 inches wide and ¼ of an inch thick, and the second piece 300 feet long, 6 inches wide and ¼ of an inch thick.

BOWERS, DURE & COMPANY, of Wilmington, Del., shipped ten copper-bottom gondola cars to the Norfolk and Western Railroad and sixteen transfer trucks to the Shenandoah Valley Railroad on the 15th inst.

SUBSCRIBE for the Railroad Journal.

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which form non-metalic, permanently elastic compensating cushions, absorbing shocks and vibrations, and absolutely locking the nuts. These Washers have been adopted by a large number of railroads as the cheapest and best device in use. Flexible vulcanized-fibre dust guards and oil box packings, which are absolutely unaffected by oil and grease, are far more durable than leather and much cheaper.

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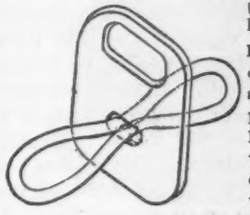
SWEETLAND SAFETY LINK GUIDE.

Patented August 29, 1882.



The guide is manipulated by means of the handle at the upper part, extending far enough above the draw-head to prevent danger of the hand being crushed while coupling cars, and can be used in any place where an ordinary link is used.

The guide plate is made of one-quarter inch iron, ten inch by twelve inch—including the handle—and weighs less than six ponnds.

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No. 21 Park Place,
NEW YORK.

The Events of a Lifetime.

Rev. D. A. Randall, D. D., in the course of an address upon the "Lessons of a Lifetime," delivered by him in Columbus, Ohio, on the 14th instant—being the seventieth anniversary of his birthday—is reported to have said:—

It has been the privilege of him who addresses you to live in a period of the world's history which—for remarkable and stirring events, for useful discoveries and wonderful inventions, the rapid development of the world's resources, and the salutary and benign progress of the human race—has never been equaled by any period of the same duration in the annals of the world.

While your speaker was yet in his cradle the war of 1812 had just closed; trade was depressed; the country in debt; the recuperative resources of the Nation limited, and the inducements to vigorous enterprise far from encouraging. We had then, all told, a population of a little less than 8,000,000. Nearly all the country west of New York was an unexplored wilderness where the savage and the wild beast held undisputed dominion. New York itself had a population of less than one million. Between the settled portions of the country transportation was laborious, slow and difficult. All merchandise west of Albany was carried on wagons, and all property taken to the East, if any was worth the transportation, was taken by the same laborious way; while public travel was by the old lumbering stage coach, from two to six miles an hour, according to the season of the year and the condition of the roads. I well recollect when in Western New York the stumps of the newly cleared land were still standing in the streets of some of her now most populous cities.

It is within my recollection when the idea of a canal from Buffalo to Albany created heated discussions, and DeWitt Clinton, then Governor of New York, was denounced by many as a fanatical enthusiast for his earnest advocacy of the work. When completed in 1825 I was but a boy of twelve, and I well recollect the day when, with a great and enthusiastic celebration, the water was let into the great ditch, as some of the opponents of the scheme were accustomed to call it. In lack of any other mode of rapid communication, cannon were planted all along the line at such intervals as could easily be heard from one to the other, and at the auspicious moment the sound at Albany was caught up and boom, boom, boom it went along the line till the echo of the last signal died away over the waters of the great lake. It was the most rapid telegraphic communication that could then be devised. The opening of this canal proved an auspicious day for the whole country. It opened a channel of communication and transportation from the great lakes of the West to the very heart of the nation's commerce in the East, and the pulsations of a young and vigorous nation beat with a new life.

But as the boy outgrows his early suits, so the young and vigorous nation soon outgrew its facilities for internal trade and communication. As necessity is a spur to enterprise and invention, the powers of genius were called into requisition to meet the exigencies of the case. It seems to be in the very nature of things, or rather perhaps we should say in the order of Providence, that when a want exists some one is found equal to the emergency. As Nature abhors a vacuum, Genius rushes in to fill a waiting void.

While I was yet in my cradle Fulton was still engaged in his experiments, and improving his methods of steamboat navigation. In 1808 a small boat commenced regular trips upon the Hudson River, but it was not until the days of my youth that steam navigation was made so successful and profitable as to be brought into any very extended use, and not till I was twenty-five years of age that regular steamboat trips commenced across the Atlantic. Thus it was by the genius of Fulton and the potent agency of steam our great network of inland rivers and lakes were made certain and profitable highways of commerce.

The use of steam opened a demand for ships of greater strength, and experiments with iron instead of wood commenced. To whom belongs the honor of inventing iron ships may be a question. Its final success may have been the combined result of the genius of several inventors. Charles Olcott, a graduate of New Haven University, and for many years a resident of Medina, in this State, where he died, claimed to be the inventor of the iron ship, and that others better skilled in the business craft of the world stole from him both the invention and the emoluments. Many years ago in a visit from Medina to this city he sent down by me to be hung up in the State Library, a drawing of his first iron ship, with iron masts, which he wished to place where the public could see it.

I know not how this was, but if what he claimed for himself was true, if he had had his just reward, another name would be added to the long list of notable men that has given Ohio so distinguished a name in the galaxy of States.

But still the demands of the vigorous young Republic were not satisfied. Some more expeditious mode of transportation must be found to meet the growing necessities.

Steam had been a success on the waters, why not on the land? The slow and tedious process, and the expensive experiments by which the running of locomotives upon roads laid with iron rails was brought to any practical degree of utility seems strange to us now. It was not till 1826 that the road from Schenectady to Albany, in the State of New York, was commenced, the first of the thousands of miles that now bind cities to cities, and States to States, and link with fetters of iron the Atlantic to the Pacific. The roads built, and the few cities of our water courses could no longer monopolize the increasing commerce of our growing country. The inland cities could now compete with them in commerce and manufactures, and they were thrilled with the vigor of excitement and enterprise.

With increased facilities for commerce and speed of locomotion came the demand for greater facilities in the transmission of information. "I am going to Cleveland to-day, but I must let my friends know I am coming. How can I get ahead of railroad time?" Again the inventive genius of the age was equal to the demand.

In 1840 Prof. Morse, after a long series of experiments by himself and others, patenfed several of his most valuable improvements in the electric telegraph; but it was not until 1844 that his first line of wires was erected from Washington to Baltimore (35 miles), that the first message was transmitted. It was a hopeful and enthusiastic event when the delicate fingers of a young lady touched the sensitive keys of the little instrument in Washington, and quick as the lightning's flash the waiting friends in Baltimore read: "What hath God wrought?" Then it was found that distance was no obstacle to the transmission of intelligence—space and time were annihilated.

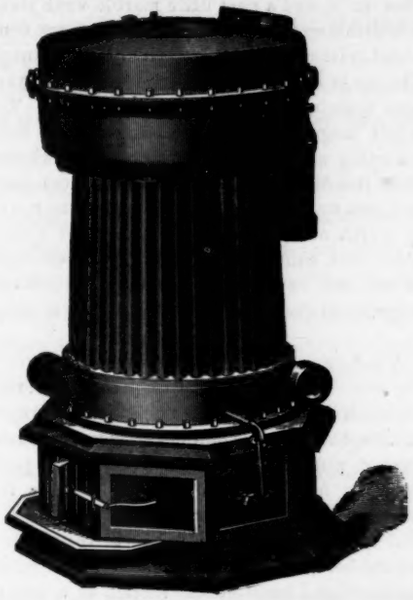
Then came the experiments for the extension of these lines under and across the great oceans. It was in August, 1858—less than twenty-five years ago—as I sat in my house on Rich street, a boy came in with a newspaper, and I opened and read, "The great Atlantic cable has been successfully laid, and a message has been transmitted to Queen Victoria at her court in London." I have not yet forgotten the sensation that thrilled me, as with an electric shock, and I could not but exclaim again in the language of the first message from Washington to Baltimore, "What hath God wrought?"

Now our telegraphic lines belt the world, and along the trembling pathway the subtle fluid that Franklin first brought on his kite-strings from the clouds and Morse harnessed in faith and trembling hope to his little slender machine, finds its magic way through forest and under oceans, and over deserts and continents, and republics and empires. Presidents and kings stand as if face to face, and the merchants of our great cities market their produce in London, Calcutta and Hong Kong while it is yet lying upon our wharves at home.

And now while I look back over the past and stand astonished at these inventions and improvements which I have seen grow from infancy to gigantic proportions, a greater wonder than them all has grown into use under your own eyes, and in your own houses, in the telephone, by which at the call of your little bell, you talk with your friends in any part of the city, or in distant cities, as freely and easily as though they were in your own office or drawing-room. As I have contemplated these things I have sometimes felt as though the world about me was full of invisible conductors, and that even my private thoughts were transmitted by invisible conductors to the minds of others, or that unseen and mystic wires linked us to the very throne of Omniscience and found a record there.

A very large meeting of colored men from various portions of the State was held at Wilmington, N. C., on the 17th inst. for the purpose of promoting the first railroad enterprise ever started exclusively by men of that race. Several thousand dollars were subscribed. The projected road is to run from Wilmington into the eastern counties of North Carolina. There is a strong probability that the road will be built. The movement creates much interest.

THE SALMON CAR HEATER



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by using THE SALMON CAR HEATER.
It Insures Safety from Fire in case of Accident, Economy in Fuel and RAPID CIRCULATION. It heats quickly, is SELF-REGULATING, and can be used for either STEAM OR HOT WATER.

The Water Tubes do not come in contact with the Coals, but occupy the Smoke Flue in such a manner as to absorb the greatest amount of heat from Coal in a low state of combustion without danger of chilling the fire.

Once filled with coal the fire will last from 24 to 60 hours, according to weather, without replenishing, as proved by actual test.

At the last "Mechanics' Fair" it received the Silver Medal, being the highest award to heaters of any kind.

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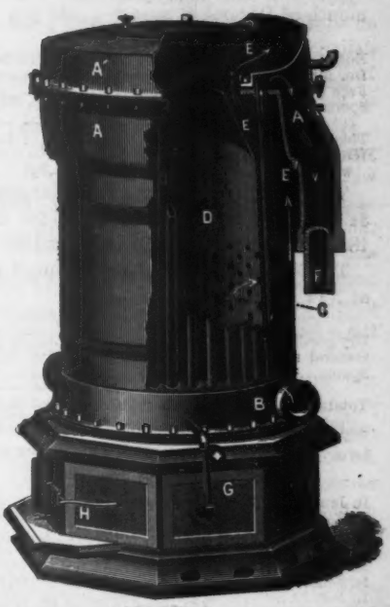

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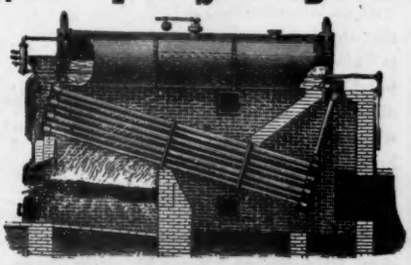

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Address, Munn & Co., publishers of Scientific American, 261 Broadway, New York.
Handbook about patents mailed free.

Commerce of New York.

THE foreign imports at New York for the month of December were :—

	1880.	1881.	1882.
Ent. for cons.....	$14,726,093	$19,303,335	$18,800,319
Do. for warehousing	5,817,234	6,166,934	9,074,155
Free goods.....	10,540,073	13,984,380	12,976,076
Specie and bullion..	16,202,447	1,757,101	1,472,318
Total ent. at port....	$47,285,847	$41,121,453	$42,322,868
Withdrawn from warehouse.....	6,835,847	6,599,836	5,969,979

This brings the total for the year 1882 up to $499,928,774, against $495,424,906 for the year 1881, and $539,386,776 for the year 1880.

The following is the classification of imports at New York for the years:—

	1880.	1881.	1882.
Dry goods.....	$119,844,120	$111,537,020	$132,262,730
General mdse.....	344,332,560	327,864,653	359,971,256
Specie.....	75,210,096	56,023,233	7,694,788
Total.....	$539,386,776	$495,424,906	$499,928,774

The duties received at New York for the twelve months ending with December were:

	1880.	1881.	1882.
In January..	$11,960,677 78	$10,572,559 15	$13,387,515 96
In February.	12,254,602 24	11,217,766 87	13,585,053 25
In March....	14,469,557 65	13,122,964 03	13,999,138 76
In April.....	11,901,071 43	11,678,760 93	11,906,105 45
In May.....	9,752,873 54	11,055,935 39	11,981,893 08
In June.....	10,699,840 52	10,993,452 70	11,428,930 11
In July.....	13,360,394 37	12,079,573 95	13,730,752 87
In August....	14,492,361 87	15,205,469 58	16,483,260 62
In Sept.....	12,856,636 10	14,104,647 51	14,690,362 47
In Oct.....	10,574,333 53	13,011,426 27	13,095,876 47
In Nov.....	9,079,082 36	9,711,039 46	9,938,679 71
In Dec.....	9,230,734 57	10,972,321 38	10,380,192 56
Total 12 mos.	$140,632,065 96	$143,724,917 22	$154,607,761 58

The exports from New York to foreign ports for the month of December were :—

	1880.	1881.	1882.
Dom. produce.....	$33,620,453	$29,430,216	$32,419,628
For. free goods.....	978,709	1,156,495	1,569,477
Do. dutiable.....	415,127	643,635	620,348
Specie and bullion.	1,667,962	1,104,760	1,525,353
Total exports.....	$36,682,251	$32,335,106	$36,134,806
Do. exclusive of specie.....	35,014,289	31,230,346	34,609,453

The exports from New York to foreign ports, exclusive of specie, for the years named were:—

	1879.	1880.	1881.	1882.
1st quar.	$78,474,748	$82,934,173	$94,691,907	$79,172,684
2d quar..	79,982,231	112,049,304	91,307,604	78,545,537
3d quar..	96,423,052	113,106,655	100,488,172	95,628,302
4th quar.	101,337,534	107,732,685	86,648,687	93,142,060
Total....	356,218,565	415,822,827	373,136,370	346,448,583

Anthracite Coal Tonnage.

THE following is an official statement of the anthracite coal tonnage of last year compared with the previous year:

	1882.	1881.
Philadelphia and Reading Railroad.....	7,000,113.01	6,940,283.09
Lehigh Valley Railroad.....	5,033,789.19	5,721,869.12
Central Railroad of New Jersey	4,211,052.06	4,085,423.14
Delaware, Lackawanna and Western.....	4,638,717.03	4,388,968,17
Delaware and Hudson Co.....	3,203,168.04	3,211,498.09
Pennsylvania Railroad.....	2,332,973.18	2,211,363.09
Pennsylvania Coal Co.....	1,469,820.15	1,475,380.05
New York, Lake Erie and Western Railroad.....	330,510.14	465,230.09
Total.....	29,120,096.01	28,500,016.06

The stock of coal on hand at tide-water shipping points, December 31, 1882, was 562,116 tons; on November 30, 1882, 535,891 tons; increase, 26,225 tons. The amount on hand December 31, 1881, was 497,024 tons. Of the total production in 1882, 13,971,371 tons, or 47.98 per cent, was from the Wyoming region; 5,689,437 tons, or 19.54 per cent, from the Lehigh region, and 9,449,288 tons, or 32.48 per cent, from the Schuylkill region. The competitive tonnage, including all coal which, for final consumption or in transit, reaches any point on the Hudson River or the Bay of New York, or which passes out of the Capes of the Delaware, was in 1881, 12,169,030 tons; in 1882, 12,018,764 tons.

Immigration Statistics.

THE Chief of the Bureau of Statistics reports that, during the month of December, there arrived in the customs districts of Baltimore, Boston, Detroit, Huron, Minnesota, New Orleans, New York, Passamaquoddy, Philadelphia and San Francisco, 30,600 passengers, of whom 25,868 were immigrants, 2,895 citizens of the United States returning from abroad, and 1,837 aliens not intending to remain in the United States.

Of this total number of immigrants, there arrived from England and Wales, 3,029; Ireland, 1,397; Scotland, 531; Austria, 600; Belgium, 185; Bohemia, 335; Denmark, 315; France, 376; Germany, 8,420; Hungary, 1,571; Italy, 2,273; Netherlands, 227; Norway, 277; Russia, 410; Poland, 107; Sweden, 849; Switzerland, 1,047; Dominion of Canada, 3,699, and from all other countries, 211.

The total numbers of immigrants arrived from the principal foreign countries during the six months ended December 31, 1882, as compared with the same period of the previous year and during the calendar year, were as follows:

	Six mos. ended Dec. 31, 1882.	Six mos. ended Dec. 21, 1881.	Calen. year. ended Dec. 31, 1882.
England and Wales.....	38,207	44,179	77,725
Ireland.....	20,286	27,077	69,461
Scotland.....	5,944	8,548	11,619
Austria.....	4,702	8,841	12,301
Germany.....	92,727	111,892	229,996
Italy.....	8,275	11,024	29,317
Norway.....	9,462	11,740	26,185
Sweden.....	16,581	22,118	58,742
Dominion of Canada.....	34,242	44,197	83,071
All other countries.....	40,043	38,741	109,575
Total.....	270,479	328,357	712,542

The arrival of immigrants in the customs districts above specified, comprise about ninety-seven per cent of the immigration to the entire country.

Palatial Cars.

A COUPLE of elegant cars, built by the Pullman Company, to run between Boston and Montreal on the Central Vermont Railroad have just been delivered. They are similarly constructed and are called the "Pilgrim" and "Puritan," one of which is thus described by the Montreal *Witness:*

Externally it is neatly finished in a dark green with chaste ornamentation, but upon the interior the decorator's art has been exhausted. It is finished in highly polished mahogany, with most elaborate inlaid work in satin, walnut, ebony and other fancy woods. The roof is of whitewood with hand ornamentation. The upholstering and indeed all the finishings are of the most palatial character, and as one sits down, it is apparent that comfort and beauty have been equally considered in the whole design. A novel and most welcome feature is a charming little refreshment room, where tea or coffee, sandwiches, an oyster stew, etc., may be obtained on getting up in the morning. At one end of the car is a comfortable little apartment completely shut off, to be used as a smoker's paradise, while at the other end is a luxurious little parlor for the ladies. There is but one door to it, and a neat little marble wash stand and drinking font. The wash rooms are comfortably large and most conveniently appointed. The car is heated by hot air pipes under every seat, securing uniformity of temperature. The whole magnificently furnished structure rides smoothly upon twelve 42-inch paper wheels. It is the finest car ever built by the company and cost upward of $22,000. A prudent novelty worth mentioning is a small chest with a glass door, containing a number of tools, such as an axe, saw, sledge hammer, etc., which might be of great service in case of any mishap.

A TAILOR and his wife had frequent quarrels. On one occasion the wife responded to every reproach of her husband—"Scissors." Enraged at this, the tailor seized his spouse, and rushing out, plunged her into a neighboring pool. Bringing her head above water to give her breath, she still cried—"Scissors." After several duckings he brought her to the surface, when, being unable to articulate, she raised her hand and imitated the motion of a pair of scissors.

A PARLIAMENTARY return reports that the depreciation in the value of the crops in Ireland for the year 1882, in consequence of the unfavorable harvest, aggregated the sum of £5,118,167 as compared with the favorable year 1881, and £2,539,644 as compared with the average of the preceding ten years. The bulk of the loss was on the potato crop, which was 4,317,687 pounds as compared with the year 1881, and 2,274,431 pounds as compared with the average for the preceding ten years.

DAYTON, Ohio, is to have a new street railroad to compete with that of Fifth street. A local paper says the new line will be "the longest and most metropolitan in Dayton." Cincinnati capitalists are behind the scheme, which will cost from sixty-five thousand to seventy-five thousand dollars to carry out. More cash is available than will be needed.

THE Baltimore *Sun* states that the Chesapeake and Ohio Railway will in a short time move a large portion of its coal freight to deep water over the Richmond and Allegheny Railroad, satisfactory arrangements for this having been made.

THE Massachusetts Railroad Commissioners have decided that the reasonable requirements of communities along the line of a railroad must be met, even though the extension of such service entails loss to the company.

FOUR British steamers arrived at Baltimore on the 19th inst. with iron ore from Benisaf, Carthagena and Marbella, the aggregate of whose cargoes was 7,183 tons.

THE whole duty of man is embraced in the two principles of abstinence and patience; temperance in prosperity, and courage in adversity.—*Seneca.*

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Are used to call attention to the fact that this is an advertisement of the **CHICAGO, MILWAUKEE & ST. PAUL RAILWAY.**

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Ticket offices everywhere are supplied with Maps and Time Tables which detail the merits of the line, and agents stand ready to furnish information, and sell tickets at cheapest rates over the **Chicago, Milwaukee & St. Paul Railway.**

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They will not Blow out or Freeze out.

There is but one opening in the top for the smoke to escape, and that opening is always kept on the opposite side from the wind by the top resting on a point, and is turned with the wind by the *weather vane* attached to the top.

It also takes air through the same opening through an outer chimney, a double top of the frame and tubes running down to the lamp.

The air can also be taken from the inside of the building through the gas pipe holder, which is another way to head off the storms.

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Any of our readers who will enclose two three-cent stamps in a letter to the **Columbus Buggy Co., Columbus, O.,** will receive in return a beautiful engraving in colors, representing an **Australian scene,** and their manner of traveling in that country with **Ostriches** as a motor. They **give** this picture, (the packing costing six cents), to **all** who may send for it, desiring in this manner to make themselves more widely known to the people.

[Mention this paper.]

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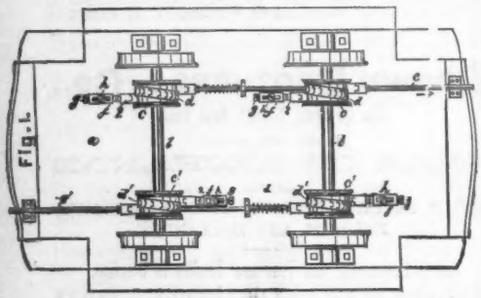
New Brake for Street-Cars.

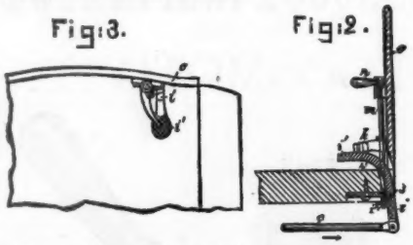
THE invention of Mr. W. B. Quigley, of Boston, patented December 5th last, relates to a car-brake, and is especially intended for use upon street-cars. We append a complete description, with illustrations.

The brake has for its object to provide a brake which can be readily operated by the foot of the driver, thus leaving both hands free to manage the horses. The brake is applied by means of a bent lever, having one arm arranged to be acted upon by the foot of the driver standing on the platform, and its other arm connected with the rod by which the brake is applied directly to the wheels. The brake itself consists of a flexible band or chain wound wholly around a friction-drum fixed to the axles of the wheels in such a manner that the friction between the drum and chain tends to assist the action of the brake-lever in tightening the chain. As shown below, both axles are provided with drums and co-operating chains connected with a single rod extending to the end of a car and connected with the brake-actuating lever, and when the car is intended to run in both directions the said brake mechanism is duplicated at the two ends of the car.



The invention also consists in the combination, with the brake-actuating lever, of a locking device, by which the brake may be retained applied to the wheels when the driver leaves the car, it also being arranged to enable the brake to be applied by power of the hand instead of the foot, if desired.

Figure 1 is an under view of a car having braking mechanism embodying this invention; Fig. 2, a longitudinal section of a portion thereof, showing the brake-actuating lever and its locking device; and Fig. 3, a plain view of the parts shown in Fig. 2. The car *a* is of the construction usually employed for street-cars, it having two axles, *b b'* with connected pairs of wheels. The said axles *b b'* are provided with friction-drums *c c'*, having flexible friction devices, shown as chains *d d'*, encircling them, and attached at one end, as 2, to the car-body, and at their other end to rods *e e'*, one running to each end of the car. It will be seen that by moving the rod *e* in the direction of the arrow, Fig. 1, when the car is moving in the same direction the chains *a* will be tightened on the drums *c*, and that the friction produced between the said chains and drums tends to still further tighten the chains, thus causing them to act with a very powerful friction to resist the rotation of the wheels and axles. The said chains are connected at 2 with sliding pieces *f*, having adjusting-screws *g* to bear against studs *h*, that are fixed to the car-body. The said ends of the chain may be adjusted to cause the tension derived from the movement of the rod *e* to be about equally divided between the said chains. The rod *e* is thus moved to apply the brakes by means of a bent lever, *i*, pivoted at 3 upon the platform of the car, it being shown as having one arm curved at 4 into a substantially horizontal position, and provided with a foot-piece, *i'*, to receive the pressure of the foot of the driver, the said foot-piece being shown in Fig. 2 as depressed and the brakes applied. In order to retain the said brakes applied without keeping the foot upon the foot-piece *i'*, a locking device is provided, consisting of an arm, *k*, fixed upon a shaft, *m*, provided with a handle, *n*, the said arm being adapted to engage the upper part of a treadle, *i*, and retain it in its depressed position, as shown in Figs. 2 and 3. When the brakes are not applied, the shaft *m* is rotated, so that the arm *k* and handle *n* lie against the dash-board *o* of the car-platform, and the curvature at 4 of the lever *i* is such, that by forcibly rotating the shaft *m* by means of the handle *n*, the arm *k* engages the said curved portion, and will depress the treadle *i* of the lever and apply the break. As shown in Fig. 1, the drums *c*, with their chains *d* and the connected parts, are operated from one end of the car, while the drums *c'*, with their chains *d'*, are operated by precisely similar apparatus at the other end of the car.



The spring, *r*, intending to draw back the rods *e e'* in the opposite direction to that in which they are moved by the break-actuating levers in applying the brake, so as to thus retain the chains slack and inoperative except when the brake is positively applied. It is obvious that a single one of the drums *c* and chains *d* might be employed, thus applying the braking power only to one axle from either end of the car. The shoulder *i2* limits the backward movement of the lever *i* when it arrives at its normal position. Two spring are attached to the car above each of the drums, tending to keep the chains from touching the drums when the brakes are not applied. It will be seen by applying the brake by the foot, that the motion of the car furnishes the remainder of the power to resist the rotation of the wheels. No snow nor ice can interfere with the brake, which does not wear away car-wheels, and does not injure passengers on the front platform, as is sometimes the case by the present brake now in use. It has been found that the car can be stopped by this brake in less than one-half the time it takes to stop it by the brake now in use.

THE art of being able to make a good use of moderate abilities wins esteem, and often confers more reputation than real merit.—*Rochefoucauld.*

ADVERTISE in the Railroad Journal.

A PATENT has just been taken out in Washington for an invention, which is designed to save time and trouble in preventing the blockade of street railway cars in case of fire or other obstructions. It is termed a "turn-table," and is constantly attached to each car. Through its operations the conductor can hoist the car when fully loaded with passengers, turn half around on the cross track in a few seconds, and so run to the next corner, repeating the operation wherever necessary until he returns to his own line beyond the point of blockade.

THE new sleeping-cars for the Shore Line express of the Boston and Providence Railroad have the berths provided with spiral springs and hair mattresses, and the upper berths have a patent safety lock, which prevents it from locking in case of its shutting up when any one is occupying it, thus guarding against the danger of a person being confined beyond escape in case of a car going off the rails and turning over.

THE Burton Stock Car Company have contracted for a number of cars for the humane transportation of cattle, to be built by the Wason Manufacturing Company of Springfield, Mass. These cars will have the suspension car truck, with double elliptic springs and Janney coupling, and when completed will run between New York and Chicago.

NEARLY half of the Texas and Pacific eighty-mile reservation in Concho county, Mexico, was filed upon by different parties on the 15th inst.

Coverings for Steam Pipes, Etc., Etc.

WE took occasion a few weeks since to call the attention of our readers to the advanced position occupied by the H. W. Johns Manufacturing Company of this city in the matter of non-conducting covering for steam-pipes, boilers, etc., etc. That we were fully justified in doing this is manifested in the fact that the above company have very recently completed large contracts for the following named parties: Church & Co., Greenpoint; D., L. & W. R.R. Co. at Hoboken and Kingsland; Morris & Cummings Dredging Co.; Pennsylvania Railroad Co.'s new ferry boats Baltimore and Chicago; Hotel Brandon, Park avenue; United States new Barge Office; J. Ellis & Co., Edgwater, N. J.; Orange Water-Works, Orange, N. J.; Eagle Pencil Co., city, and many others.

SIX miles of track have been laid on the New Orleans and Mississippi Valley Railroad northward from Kenner. Another force of men as soon as the weather clears up will commence laying track from Kenner to New Orleans.

THE Boston, Revere Beach and Lynn Railroad Company has adopted very stringent rules regarding the use of liquor by its employés.

AN able man shows his spirit by gentle words and resolute actions; and he is neither hot nor timid.—*Chesterfield.*

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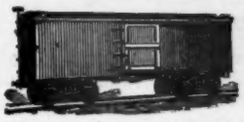
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IMPORTANT ANNOUNCEMENT TO INVENTORS.

THAT department of the AMERICAN RAILROAD JOURNAL which contains descriptions of new inventions properly coming within its range of subjects, is regarded with great notice and favor, particularly by those directly interested in learning what the latest applications of mechanical ingenuity in railroading are, and by those who have produced inventions which they desire to make as widely known as possible.

The large and widespread circulation of this paper, its prestige as the oldest railroad journal in the world, and the weight attached to its contents by the general consent of leading railroad men in all countries, give such value to its carefully prepared descriptions of new machinery and appliances as cannot be found outside of its columns.

The interest manifested by inventors in supplying us with information of their doings, and the eagerness with which this is received, encourage us to give an increased attention to that department of this paper treating of new inventions.

We therefore repeat our invitation to all persons who have produced what they regard as improvements coming within the range of railroad operations, to communicate with us promptly regarding the same.

All matter sent us will be thoroughly examined and considered, and no inventions in our opinion likely to be practicable and useful will be passed over without receiving due attention from us.

List of Patents for Inventions Relating to Railways, Manufacturing, Mining, Street Cars, Machinery, Etc.

BEARING DATE OF JANUARY 16, 1883.

270,573. Check Valve: George F. Blake, Belmont, Mass.
270,574. Steam Pumping-Engine: George F. Blake, Belmont, Mass.
270,575. Duplex Pumping-Engine: George F. Blake, Belmont, Mass.
270,576. Valve-Gear for Steam Pumping-Engines: Albert J. Blakeslee, Duquoin, Ill.
270,583. Brake-Shoe: Charles E. Gore and Joseph Eisele, Lafayette, Ind.; said Eisele assignor to Benjamin F. Masten, same place.
270,603. Railway Car Ventilator: Edward H. Mott, Chicago, Ill.
270,604. Railroad-Signal: Louis R. Munson, Brainerd, Minn.
270,614. Steam-Boiler-Tube Cleaner: Isaac L. Stover, Centralia, Ill.
270,618. Screw-Cutting Die: Emile J. Voegtlin, Telford, Pa.
270,621. Power-Converter: James F. Winchell, Springfield, Ohio:
270,626. Lubricator: William H. Bowen, Lincoln, R. I.
270,633. Rotary-Cutter: James H. Busell, Boston, Mass.
270,636. Friction-Clutch: Cyril C. Child, Boston, Mass.
270,637. Metallic Railroad-Tie: Joseph Clark, Brooklyn, N. Y.
270,638. Steam-Trap and Boiler-Feeder: John Collins, Des Moines, Iowa.
270,651. Fare-Box: Francis A. Farrell, Brooklyn, N. Y.
270,653. Feeding Air to Furnaces: Thomas Mara Fell, Brooklyn, N. Y.
270,662. Traction-Wheel: Lewis Hall, Metamora, Ill., assignor of one-fourth to Andrew G. Scherer, Peoria, Ill.
270,671. Means for Operating Pumps in Deep Wells and Mines. John H. Huffer, Jacksonville, Oreg., assignor of one-fourth to C. C. Beekman, same place.
270,673. Belt-Fastener: Charles I. Humphreys, Boston, Mass.
270,678. Hand-Car: Reberto H. Johnson, Palestine, Tex.
270,684. Steam-Engine Governor: Thomas Malcolmson, Oil City, Pa., assignor of one-half to O. B. Goodwin same place.
270,688. Mechanical Motor: Risdon M. Odell and David L. McKitrick, Sr., Baton Rouge, La.
270,689. Mining-Car: Gustav Olsen, San Francisco, Cal., assignor of one-half to Edward A. Rix, same place.
270,692. Feed-Water Heater: Richard W. Pelton, Townsend, Sandusky county, assignor of one-half to M. F. Cowdery and O. P. Cowdery, Sandusky, Ohio.
270,694. Car-Coupling: Mathias Peters, Jr., Chicago, Ill.
270,705. Bell-Cord Coupling: Charles H. Tumey, Austin, Tex., assignor of one-half to Hancock & Hancock, same place.
270,707, Track-Gate for Railways: Henry R. Vordermark, Indianapolis, Ind.
270,727. Railroad Signal-Lantern: James H. Berry, Greenville, S. C., assignor to himself and William M. Berry, Mount Airy, Ga.
270,732. Car-Brake: Edmund R. Bristol, Madison, Wis.
270,743. Exhaust-Nozzle for Steam-Engines: Willard A. Clarke, Stillwater, Minn., assignor to the Northwestern Manufacturing and Car Company, same place.
270,744. Cut-Off Valve: Willard A. Clarke, Stillwater, Minn., assignor to the Northwestern Manufacturing and Car Company, same place.
270,757. Journal-Box Attachment: Enos Curtiss, Findlay, Ohio.
270,759. Compound Disk-Engine: Frank Darkin, New York.
270,762. Lubricator: Levi P. Dollison, Wabash, Ind.
270,768. Car-Coupling: John Elder, St. James, Mo.
270,710. Flue-Expander: John Faessler, Moberly, Mo.
270,773. Furnace: Joseph Flannery, Philadelphia, Pa.
270,776. Excavating or Ditching Device for Attachment to Cars: Dennis Freel, Chariton, Iowa.
270,791. Locomotive Head-Light: Arthur Harris and George M. Clark, Chicago, Ill., assignor to J. McGregor Adams, same place.
270,798. Car-Brake: Thompson Hersee, Buffalo, N. Y.
270,804. Head-Light: Edwin S. Jenney, Syracuse, N. Y.
270,805. Lubricator: Chas. H. Jewell, Chicago, Ill.
270,840. Spike: William H. Perry, Sharon, Pa.
270,842. Reversing-Gear for Engines: Francis W. Randall, Tekonsha, Mich.
270,860. Coupling-Link: Isaac H. Trabue, Louisville, Ky.
270,865. Car-Coupling: Albert S. Way and John W. Lutz Springfield, Ohio.
270,869. Car-Wheel Chill: William Wilmington, Toledo, Ohio.
270,871. Brake-Beam for Railway-Cars: William Woodcock, Elizabeth, N. J.
270,874. Car-Door Fastening: Edward J. Brooks, East Orange, N. J., assignor to E. J. Brooks & Co., New York.
270,875. Steam-Engine Cylinder: William A. Clarke, Stillwater, Minn., assignor to the Northwestern Manufacturing and Car Company, same place.

A Smoke Consuming Engine.

A NEW engine, which utilizes Mallett's device for consuming smoke, is about to be tested on the New York, Lake Erie and Western Railroad, on which a consolidated locomotive is being equipped. The smokestack disappears entirely, and in its place is a man-hole merely. The gases produced by the complete combustion will escape about the periphery of the extended boiler casing. The fan is worked by a small engine in the smoke-box, and a powerful draft maintained when the locomotive is at rest. The exhaust steam passes along the side of the locomotive to the tender, which is divided into three compartments. The upper one is for fresh water, the middle one contains copper tubes connecting with the external air in front and with a suction fan in the rear. The exhaust-steam circulates around the copper tubes, and becomes in part condensed, the resulting hot water falling into the lower compartments. The uncondensed steam comes in contact with a spray of water falling from the upper compartment, and the condensed water enters the lower department, whence hot water is pumped into the boiler. The air used to condense the steam is employed for heating and ventilating cars, being delivered through a conduit which, with coupling ends, passes along beneath the cars. This system does away with coal stoves or heaters, and supplies the car with fresh air and warm air without danger of fire in the case of a smash-up.

The Berdell Mortgage.

JUDGE NELSON, of the United States District Court, Boston, Mass., rendered a decision on the 12th inst., sustaining the demurrer in the case of William F. Graham v. Boston, Hartford and Erie Railroad Company et al.

This was a bill in equity, filed July 8, 1880, by a shareholder of the Boston, Hartford and Erie Railroad Company, in behalf of himself and every shareholder and creditor of the company, to set aside as invalid a mortgage given by the company on its railroad, franchise and property to Robert H. Berdell, Dudley T. Gregory and John C. Bancroft Davis, as trustees, to secure the payment of an issue of the bonds of the company, to the amount of twenty millions of dollars. The defendants are the Boston, Hartford and Erie Railroad Company, and its assignees in bankruptcy, the New York and New England Railroad Company, which is at present in possession of and operating the railroad, certain persons now living, and the personal representatives of others now deceased, who have, at different times, acted as trustees under the mortgage, the treasurer and receiver-general of the Commonwealth of Massachusetts, George Ellis, Frederick A. Lane and W. C. Eayrs. The case was heard upon separate demurrers to the bill filed by the New York and New England Railroad Company, by the assignees of the Boston, Hartford and Erie Railroad Company, by Hart & Clark, two of the trustees, and by the executrix of Mark Healey, a deceased trustee. Among the causes of demurrer assigned by each of these defendants, are want of equity, laches and want of jurisdiction in the court. Judge Nelson overrules the demurrer for want of jurisdiction and sustains those for want of equity and laches.

English Pattern Sleeping-Cars.

Two new sleeping-cars, specially constructed by the Pullman Company, on what is called the English pattern, arrived on Tuesday night at King's-cross station. These carriages differ from those at present in use in having side entrances, thereby dispensing with the end platforms, and in being divided into four compartments, so as to combine the comfort and, to a certain extent, the privacy of an English first-class carriage with the convenience of the sleeping-car. Each compartment contains cushioned seats as well as berths and beds for four persons. There is a continuous passage from one end of the car to the other for the use of the attendant, but ordinarily each section is separated from the rest by doors and curtains. The new cars are each rather over twelve yards long and weigh about thirteen tons. They were built in America, shipped to England in sections, and put together and finished at Derby, and have been named "Balmoral" and "Culross."—*London Railway Times.*